

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Connie S. Thompson Examiner #: 79241 Date: 9/24/02
Art Unit: 1772 Phone Number 305 94488 Serial Number: 091 879 752
Mail Box and Bldg/Rm Location: CP3 1128/B Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Polymer matrix electroluminescent materials & devices

Inventors (please provide full names): Matthew Marrocco Farshad Motamed

Earliest Priority Filing Date: June 12, 2001

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

please do a search and a CAs search on claim 1 using
the species #XI (see attached) and claim 26 with the
polarizable ligand species # 17 (see attached).

Thank you.

STAFF USE ONLYSearcher: R. Fuller

Type of Search

Vendors and cost where applicable

Searcher Phone #: _____

NA Sequence (#) _____

STN _____ ✓

Searcher Location: _____

AA Sequence (#) _____

Dialog _____

Date Searcher Picked Up: 9/26/02Structure (#) 2

Questel/Orbit _____

Date Completed: 9/26/02

Bibliographic _____

Dr. Link _____

Searcher Prep & Review Time: 70

Litigation _____

Lexis/Nexis _____

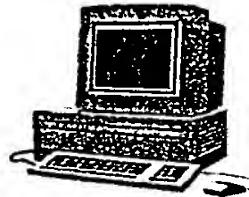
Fulltext _____

Sequence Systems _____

EIC1700

Search Results

Feedback Form (Optional)



Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the EIC searcher* who conducted the search *or contact:*

Kathleen Fuller, Team Leader, 308-4290, CP3/4 3D62

Voluntary Results Feedback Form

➤ *I am an examiner in Workgroup:* *Example:*

➤ *Relevant prior art found, search results used as follows:*

- 102 rejection
- 103 rejection
- Cited as being of interest.
- Helped examiner better understand the invention.
- Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- Foreign Patent(s)
- Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art not found:*

- Results verified the lack of relevant prior art (helped determine patentability).
- Search results were not useful in determining patentability or understanding the invention.

Other Comments:

THOMPSON 09/879752 Page 1

=> FILE REG
FILE 'REGISTRY' ENTERED AT 15:45:29 ON 26 SEP 2002
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STRUCTURE FILE UPDATES: 25 SEP 2002 HIGHEST RN 455250-99-4
DICTIONARY FILE UPDATES: 25 SEP 2002 HIGHEST RN 455250-99-4

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP
PROPERTIES for more information. See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

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FILE COVERS 1907 - 26 Sep 2002 VOL 137 ISS 13
FILE LAST UPDATED: 25 Sep 2002 (20020925/ED)

This file contains CAS Registry Numbers for easy and accurate
substance identification.

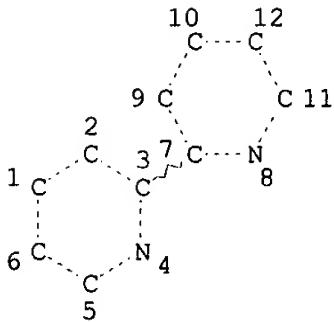
CAS roles have been modified effective December 16, 2001. Please
check your SDI profiles to see if they need to be revised. For
information on CAS roles, enter HELP ROLES at an arrow prompt or use
the CAS Roles thesaurus (/RL field) in this file.

=> D QUE
L3 54 SEA FILE=REGISTRY ABB=ON (7439-88-5/BI OR 7439-89-6/BI OR
7439-96-5/BI OR 7439-98-7/BI OR 7440-04-2/BI OR 7440-05-3/BI
OR 7440-06-4/BI OR 7440-15-5/BI OR 7440-16-6/BI OR 7440-18-8/BI
OR 7440-22-4/BI OR 7440-33-7/BI OR 7440-47-3/BI OR 7440-48-4/B
I OR 7440-57-5/BI OR 7440-61-1/BI OR 10025-76-0/BI OR 10042-88-
3/BI OR 10043-27-3/BI OR 10108-73-3/BI OR 10138-01-9/BI OR
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 OR 65181-78-4/BI OR 66-71-7/BI OR 73667-23-9/BI OR 7440-27-9/BI
 OR 7440-45-1/BI OR 7440-53-1/BI OR 76634-72-5/BI OR 9003-53-6/
 BI)

L22

STR



*8,401 structures from
this query*

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE

L24 8401 SEA FILE=REGISTRY SSS FUL L22
 L25 10589 SEA FILE=HCAPLUS ABB=ON L24
 L26 87 SEA FILE=HCAPLUS ABB=ON L25 AND (EL OR ELECTROLUMINES?)
 L29 31 SEA FILE=HCAPLUS ABB=ON L26 AND METAL?
 L30 44 SEA FILE=HCAPLUS ABB=ON L25 AND LIGHT?(3A)?EMIT?
 L31 21 SEA FILE=HCAPLUS ABB=ON L30 AND (METAL? OR LANTHAN?)
 L32 40 SEA FILE=HCAPLUS ABB=ON L29 OR L31
 L34 35 SEA FILE=REGISTRY ABB=ON L3 AND 1/M
 L35 30 SEA FILE=REGISTRY ABB=ON L34 NOT 1-30/NR
 L36 1004278 SEA FILE=HCAPLUS ABB=ON L35
 L37 37 SEA FILE=HCAPLUS ABB=ON (L26 OR L30) AND L36
 L38 55 SEA FILE=HCAPLUS ABB=ON L32 OR L37
 L44 1713 SEA FILE=HCAPLUS ABB=ON L25 AND ?POLYMER?
 L45 43 SEA FILE=HCAPLUS ABB=ON L44 AND (EL OR ELECTROLUMINES?)
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 AND (EL OR ELECTROLUMIN? OR LIGHT?(3A)?EMIT?)
 L53 22 SEA FILE=HCAPLUS ABB=ON (L38 OR L52) AND (POLYMER? OR
 PLASTIC?)/SC, SX
 L54 27 SEA FILE=HCAPLUS ABB=ON L51 OR L53
 L55 33 SEA FILE=HCAPLUS ABB=ON L25 AND LUMINESCENT SUBSTANCES/IT
 L56 28 SEA FILE=HCAPLUS ABB=ON L55 AND (L36 OR LANTHAN? OR METAL?)
 L57 12 SEA FILE=HCAPLUS ABB=ON L56 AND (?POLYMER? OR POLYMER?/SC, SX
 OR PLASTIC?/SC, SX)
 L58 36 SEA FILE=HCAPLUS ABB=ON L54 OR L57

*36 CA references from structures
Combined with
utilify*

=> D L58 1-36 BIB ABS HITIND HITSTR

L58 ANSWER 1 OF 36 HCAPLUS COPYRIGHT 2002 ACS
 AN 2002:658190 HCAPLUS
 TI Metal-containing dendrimers
 IN Burn, Paul Leslie; Christou, Victor; Lo, Shi-Chun; Pillow, Jonathan Nigel
 Gerard; Lupton, John Mark; Samuel, Ifor David William
 PA Isis Innovation Limited, UK
 SO PCT Int. Appl., 77 pp.
 CODEN: PIXXD2

DT Patent
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002066552	A1	20020829	WO 2002-GB750	20020220
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM		RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI GB 2001-4175 A 20010220
 GB 2001-6307 A 20010314

AB Light-emitting devices are described which comprise .gtoreq.1 layer that contains an organometallic dendrimer with a metal cation as part of its core, the core not comprising a magnesium-chelated porphyrin. Organometallic dendrimers which comprise a metal cation as part of its core and .gtoreq.2 dendrons are described in which .gtoreq.1 of the dendrons is conjugated, the dendrimer is luminescent in the solid state, and the core does not comprise a magnesium-chelated porphyrin. Blends of the organometallic dendrimers and a corresponding nonmetallic dendrimer having the same dendritic structure as that of the organometallic dendrimer are also described. Methods for producing dendrimers are described which entail providing a core by forming a complex between a metal cation and .gtoreq.2 coordinating groups, at least two of the groups bearing a reactive functionality; and treating the core thus provided with .gtoreq.2 dendrons which were functionalized to render them reactive towards the reactive functionalities present in the core, .gtoreq.1 of the dendrons being conjugated. Methods for producing dendrimers are also described which entail attaching a coordinating group to each of .gtoreq.2 dendrons; forming a complex between the coordinating groups and a metal cation; and optionally further treating the complex with .gtoreq.1 addnl. coordinating ligands.

IC ICM C08K005-56
 ICS C09K011-00; C09K011-06; H01L051-00; H01L051-30; C08G083-00
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 ST Section cross-reference(s): 76, 37, 78
 IT organometallic dendrimer light emitting device
 Luminescent substances
 (electroluminescent; metal-contg. dendrimers and their prodn. and blends contg. them and light-emitting devices using them)

IT **Electroluminescent devices**
(metal-contg. dendrimers and their prodn. and blends contg.
them and light-emitting devices using them)

IT **Dendritic polymers**
Organometallic compounds
RL: DEV (Device component use); IMF (Industrial manufacture); PREP
(Preparation); USES (Uses)
(metal-contg. dendrimers and their prodn. and blends contg.
them and light-emitting devices using them)

IT 66-71-7D, 1,10-Phenanthroline, reaction products with organometallic
dendrimers 366-18-7D, 2,2'-Dipyridyl, reaction products with
organometallic dendrimers 4733-39-5D, Bathocuproin, reaction products
with organometallic dendrimers 11104-93-1D, Nitrogen oxide, reaction
products with organometallic dendrimers 72914-19-3D, reaction
products with organometallic dendrimers
RL: DEV (Device component use); USES (Uses)
(metal-contg. dendrimers and their prodn. and blends contg.
them and light-emitting devices using them)

IT 340026-47-3 454180-93-9
RL: DEV (Device component use); MOA (Modifier or additive use); USES
(Uses)
(metal-contg. dendrimers and their prodn. and blends contg.
them and light-emitting devices using them)

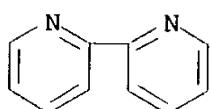
IT 453530-55-7P 453538-19-7P 453538-20-0P 453538-22-2P 453538-23-3P
453538-24-4P 453538-25-5P 453538-26-6P 453559-39-2P 453560-17-3P
RL: DEV (Device component use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
(metal-contg. dendrimers and their prodn. and blends contg.
them and light-emitting devices using them)

IT 106-41-2, 4-Bromophenol 109-04-6, 2-Bromopyridine 121-43-7, Trimethyl
borate 626-39-1, 1,3,5-Tribromobenzene 1008-89-5, 2-Phenylpyridine
1184-63-0, Europium trisacetate 1461-22-9 1791-26-0,
4-Vinylbenzaldehyde 4316-58-9, Tris(4-bromophenyl)amine 5467-74-3,
4-Bromophenylboronic acid 6825-20-3, 3,6-Dibromocarbazole 7511-49-1
7646-69-7, Sodium hydride 10025-83-9, Iridium trichloride 25519-07-7,
Terbium trisacetate 40000-20-2 56990-02-4, 3,5-Dibromobenzaldehyde
61676-62-8, 2-Isopropoxy-4,4,5,5-tetramethyl-1,3,2-dioxaborolane
89598-96-9, 3-Bromophenylboronic acid 223574-14-9 240810-88-2
453530-49-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(metal-contg. dendrimers and their prodn. and blends contg.
them and light-emitting devices using them)

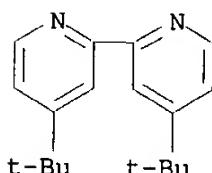
IT 4373-60-8P 63996-36-1P 164352-24-3P 355017-81-1P 355017-82-2P
452369-35-6P 452369-36-7P 452369-39-0P 453524-83-9P 453530-44-4P
453530-45-5P 453530-46-6P 453530-47-7P 453530-48-8P 453530-50-2P
453530-53-5P 453530-54-6P 453530-56-8P 453530-70-6P 453538-21-1P
453538-27-7P 453560-26-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(metal-contg. dendrimers and their prodn. and blends contg.
them and light-emitting devices using them)

IT 366-18-7D, 2,2'-Dipyridyl, reaction products with organometallic
dendrimers 72914-19-3D, reaction products with organometallic
dendrimers
RL: DEV (Device component use); USES (Uses)
(metal-contg. dendrimers and their prodn. and blends contg.
them and light-emitting devices using them)

RN 366-18-7 HCAPLUS
CN 2,2'-Bipyridine (8CI, 9CI) (CA INDEX NAME)



RN 72914-19-3 HCPLUS
CN 2,2'-Bipyridine, 4,4'-bis(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 2 OF 36 HCPLUS COPYRIGHT 2002 ACS
AN 2002:471547 HCPLUS
DN 137:192425
TI Synthesis and optical properties of a novel oligobipyridine
AU Fu, Y. J.; Wong, T. K. S.; Zhang, H. X.; Wang, G. M.; Hu, X.; Gao, Z. S.;
Jiang, M. H.
CS Division of Microelectronics, School of Electrical & Electronic
Engineering, Nanyang Technological University, Singapore, 639798,
Singapore
SO Materials Research Society Symposium Proceedings (2002), 665(Electronic,
Optical and Optoelectronic Polymers and Oligomers), 359-364
CODEN: MRSPDH; ISSN: 0272-9172
PB Materials Research Society
DT Journal
LA English
AB 5,5'-Bis[4'-methyl-(2,2'-bipyridin-4-yl)-ethyl]-2,2'-bipyridine
(BMBPYBPY), a partially conjugated deriv. of oligobipyridine, was
synthesized and found to show strong photoluminescence (PL). Compared
with the pyridine-based conjugated polymers, the shortened
conjugation length shifts the emission color from green to violet-blue.
The effects of morphol. on its PL properties were studied. From its
as-pptd. powder state, an emission peak at 418 nm can be obsd. However
the emission spectra from its diffused states such as doped in KBr, or
dissolved in CHCl₃, as well as from its amorphous film state fabricated by
vacuum evapn. are more complex. Also carried out are preliminary
electroluminescent studies. Single layer devices ITO/BMBPYBPY/Al
do not emit although current can be obsd. prominently. Double layer
devices ITO/TPD/ BMBPYBPY/Al show emissions both from TPD and BMBPYBPY.
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)
Section cross-reference(s): 27
ST synthesis optical property oligobipyridine photoluminescence
electroluminescent LED
IT Electroluminescent devices
Luminescence
Luminescence, electroluminescence
Thermal analysis
(synthesis and optical properties of a novel oligobipyridine)

IT 7429-90-5, Aluminum, uses 50926-11-9, Indium tin oxide
 65181-78-4, TPD
 RL: DEV (Device component use); USES (Uses)
 (synthesis and optical properties of a novel oligobipyridine)

IT 189027-81-4P
 RL: DEV (Device component use); PNU (Preparation, unclassified); PRP
 (Properties); PREP (Preparation); USES (Uses)
 (synthesis and optical properties of a novel oligobipyridine)

IT 1134-35-6, 4,4'-Dimethyl-2,2'-bipyridine 4111-54-0, Lithium
 diisopropylamine 92642-09-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (synthesis and optical properties of a novel oligobipyridine)

IT 50926-11-9, Indium tin oxide
 RL: DEV (Device component use); USES (Uses)
 (synthesis and optical properties of a novel oligobipyridine)

RN 50926-11-9 HCPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

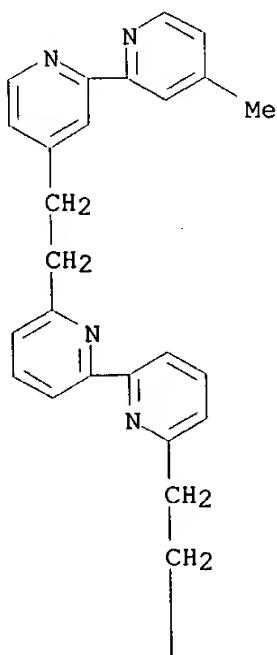
Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT 189027-81-4P
 RL: DEV (Device component use); PNU (Preparation, unclassified); PRP
 (Properties); PREP (Preparation); USES (Uses)
 (synthesis and optical properties of a novel oligobipyridine)

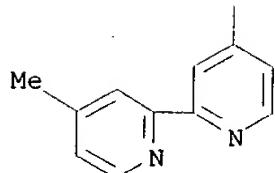
RN 189027-81-4 HCPLUS

CN 2,2'-Bipyridine, 6,6'-bis[2-(4'-methyl[2,2'-bipyridin]-4-yl)ethyl]- (9CI)
 (CA INDEX NAME)

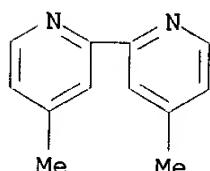
PAGE 1-A



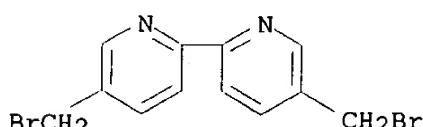
PAGE 2-A



IT 1134-35-6, 4,4'-Dimethyl-2,2'-bipyridine 92642-09-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis and optical properties of a novel oligobipyridine)
RN 1134-35-6 HCAPLUS
CN 2,2'-Bipyridine, 4,4'-dimethyl- (9CI) (CA INDEX NAME)



RN 92642-09-6 HCAPLUS
CN 2,2'-Bipyridine, 5,5'-bis(bromomethyl)- (9CI) (CA INDEX NAME)



RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 3 OF 36 HCAPLUS COPYRIGHT 2002 ACS
AN 2002:348251 HCAPLUS
DN 137:79331
TI Charge Transfer in Ferrocene-Bearing Poly(thiophene)s and Application in Organic Bilayer Photocells
AU Tan, Li; Curtis, M. David; Francis, A. H.
CS Macromolecular Science & Engineering Center and Department of Chemistry, The University of Michigan, Ann Arbor, MI, 48109-1055, USA
SO Macromolecules (2002), 35(12), 4628-4635
CODEN: MAMOBX; ISSN: 0024-9297
PB American Chemical Society
DT Journal
LA English
AB Ferrocene-contg. thiophene monomers, 1-(2,5-Dibromothiophene-3-yl)-2-ferrocenylethene and 2-(2,5-Dibromothiophene-3-yl)-3-ferrocenylacrylonitrile, were prep'd. via Knoevenagel base condensation or Wittig reactions. The corresponding poly(thiophene)s with pendant vinylene ferrocene (Fc) or cyanovinylene ferrocene units were prep'd. by

Ni-mediated coupling **polymn.** of monomers and 3-butylthiophene. Charge-transfer (CT) effects between the Fc groups and the conjugated **polymer** backbone were demonstrated by photoluminescence (PL) quenching and spectroelectrochem. observations. The current-potential (J-V) measurements on p/n bilayer devices (ITO/polythiophene/perylene imide (PV)/Ag) show significant photoconductance improvement at Fc concn. apprx.40 mol %, where the short-circuit c.d., Jsc, increased 70% compared to that of similar ITO/P3BT/PV/Ag device.

CC 35-7 (Chemistry of Synthetic High **Polymers**)
Section cross-reference(s): 36, 73, 76

ST ferrocenylethene ferrocenylacrylonitrile thiophene monomer prepn Wittig condensation; coupling **polymn** ferrocenylthiophene butylthiophene nickel catalyst; charge transfer photoluminescence polythiophene ferrocenylacrylonitrile ferrocenylethene group; photocond polythiophene ferrocenylacrylonitrile ferrocenylethene photocell; spectroelectrochem optical band gap polythiophene ferrocenylacrylonitrile ferrocenylethene

IT **Polymers**, preparation
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(conjugated; prepn. of monomers and coupling **polymn.** and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)

IT **Polymerization**
(coupling; prepn. of monomers and coupling **polymn.** and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)

IT Redox reaction
(electrochem.; prepn. of monomers and coupling **polymn.** and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)

IT Band gap
(optical; prepn. of monomers and coupling **polymn.** and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)

IT Conducting **polymers**
(polythiophenes, ferrocenylethene and ferrocenylacrylonitrile contg.; prepn. of monomers and coupling **polymn.** and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)

IT Charge transfer interaction
Coupling reaction
Electric current-potential relationship
Exciton
Knoevenagel reaction
Luminescence, **electroluminescence**
Luminescence quenching
Photoconductivity
Photoelectric devices
Photoexcitation
UV and visible spectra
Wittig reaction
(prepн. of monomers and coupling **polymn.** and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)

IT 7440-22-4, Silver, uses 50926-11-9, Indium tin oxide
RL: DEV (Device component use); USES (Uses)
(contact layer; prepн. of monomers and coupling **polymn.** and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)

IT 366-18-7, 2,2'-Bipyridyl

- IT 1295-35-8, Bis(1,5-cyclooctadiene)nickel
RL: CAT (Catalyst use); USES (Uses)
(coupling **polymn.** catalyst ligand; prepn. of monomers and coupling **polymn.** and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)
- IT 439901-90-3P, 2,5-Dibromo-3-(cyanomethyl)thiophene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; prepn. of monomers and coupling **polymn.** and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)
- IT 440105-96-4P 440105-97-5P 440105-98-6P 440105-99-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer; prepn. of monomers and coupling **polymn.** and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)
- IT 81-33-4, Perylene-3,4,9,10-tetracarboxylic acid diimide
RL: DEV (Device component use); USES (Uses)
(n-layer; prepn. of monomers and coupling **polymn.** and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)
- IT 440663-44-5P, 3-Butylthiophene-1-(2,5-Dibromothiophene-3-yl)-2-ferrocenylethene **copolymer** 440663-47-8P, 3-Butylthiophene-2-(2,5-Dibromothiophene-3-yl)-3-ferrocenylacrylonitrile **copolymer**
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of monomers and coupling **polymn.** and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)
- IT 13191-36-1P, 2,5-Dibromo-3-methylthiophene 116971-10-9P,
2,5-Dibromo-3-butylthiophene
RL: PNU (Preparation, unclassified); PREP (Preparation)
(prepn. of monomers and coupling **polymn.** and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)
- IT 13191-37-2P, 2,5-Dibromo-3-(bromomethyl)thiophene
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of monomers and coupling **polymn.** and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)
- IT 143-33-9, Sodium cyanide 603-35-0, Triphenylphosphine, reactions
12093-10-6, Ferrocenecarboxaldehyde
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of monomers and coupling **polymn.** and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)
- IT 75-05-8, Acetonitrile, uses 3109-63-5, Tetrabutylammonium hexafluorophosphate
RL: NUU (Other use, unclassified); USES (Uses)
(spectroelectrochem. electrolyte; prepn. of monomers and coupling **polymn.** and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)
- IT 34722-01-5, 3-Butylthiophene
RL: RCT (Reactant); RACT (Reactant or reagent)

(starting material and monomer; prepn. of monomers and coupling poly_n. and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)

IT 439901-89-0P, 2,5-Dibromo-3-(triphenylphosphinomethyl)thiophene bromide
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (ylide, intermediate; prepn. of monomers and coupling poly_n. and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)

IT 7440-22-4, Silver, uses 50926-11-9, Indium tin oxide
 RL: DEV (Device component use); USES (Uses)
 (contact layer; prepn. of monomers and coupling poly_n. and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)

RN 7440-22-4 HCAPLUS
 CN Silver (8CI, 9CI) (CA INDEX NAME)

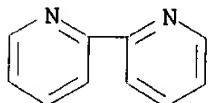
Ag

RN 50926-11-9 HCAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT 366-18-7, 2,2'-Bipyridyl
 RL: CAT (Catalyst use); USES (Uses)
 (coupling poly_n. catalyst ligand; prepn. of monomers and coupling poly_n. and charge transfer and photoluminescence of ferrocenyl-poly(thiophene)s and use in bilayer photocells)

RN 366-18-7 HCAPLUS
 CN 2,2'-Bipyridine (8CI, 9CI) (CA INDEX NAME)



RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

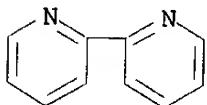
L58 ANSWER 4 OF 36 HCAPLUS COPYRIGHT 2002 ACS
 AN 2002:299840 HCAPLUS
 DN 137:125467
 TI Synthesis and characterization of novel blue light emitting poly[4,4'-biphenylylene(.alpha.-phenyl vinylene)]
 AU Kim, Yun-Hi; Shin, Dong-Cheol; Kwon, Soon-Ki; Lee, Jeong-Hyun
 CS Department of Polymer Science & Engineering and Research Institute of Industrial Technology, Gyeongsang National University, Jinju, 660-701, S. Korea
 SO Journal of Materials Chemistry (2002), 12(5), 1280-1283
 CODEN: JMACEP; ISSN: 0959-9428

PB Royal Society of Chemistry
DT Journal
LA English
AB Novel blue light emitting poly[4,4'-biphenylylene(.alpha.-Ph vinylene)] (PBPPV) was synthesized using the well-known nickel coupling reaction. PBPPV contg. an asym. mono-Ph group at the vinylene of the main chain was highly sol. in common org. solvents and was found to be thermally stable. The polymer contg. suitable electron a donating mono-Ph substituent gives rise to bright blue fluorescence both in soln. and thin solid films. The solid photoluminescence quantum efficiency of the PBPPV was 0. 43(.+-10%). The EL spectra of PBPPV and the blend with poly(9-vinylcarbazole) (PVK) had similar maxima at about 460 nm in the blue region. The max. brightness of devices of structure ITO/PBPPV/Al-Li and ITO/PBPPV : PVK (3 : 7)/Al-Li were 250 cd m⁻² and 2700 cd m⁻², resp.
CC 35-5 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 37, 73, 76
ST polybiphenylylene phenylvinylene synthesis thermal stability energy gap
IT electroluminescence device
LUMO (molecular orbital)
(HOMO gap; novel blue light emitting poly[4,4'-biphenylylene(.alpha.-Ph vinylene)])
IT HOMO (molecular orbital)
(LUMO gap; novel blue light emitting poly[4,4'-biphenylylene(.alpha.-Ph vinylene)])
IT Band gap
Current density
Electroluminescent devices
Luminescence
Luminescence, electroluminescence
Optical absorption
Redox potential
Thermal stability
(novel blue light emitting poly[4,4'-biphenylylene(.alpha.-Ph vinylene)])
IT Poly(arylenealkenylenes)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(novel blue light emitting poly[4,4'-biphenylylene(.alpha.-Ph vinylene)])
IT 7718-54-9, Nickel dichloride, uses
RL: CAT (Catalyst use); USES (Uses)
(anhyd., polymn. catalyst system; novel blue light emitting poly[4,4'-biphenylylene(.alpha.-Ph vinylene)])
IT 7439-93-2, Lithium, uses
RL: DEV (Device component use); USES (Uses)
(electrode, alloy with aluminum; novel blue light emitting poly[4,4'-biphenylylene(.alpha.-Ph vinylene)])
IT 7429-90-5, Aluminum, uses
RL: DEV (Device component use); USES (Uses)
(electrode, alloy with lithium; novel blue light emitting poly[4,4'-biphenylylene(.alpha.-Ph vinylene)])
IT 50926-11-9, ITO
RL: DEV (Device component use); USES (Uses)
(electrode; novel blue light emitting poly[4,4'-biphenylylene(.alpha.-Ph vinylene)])
IT 25067-59-8, Poly(9-vinylcarbazole)
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(emitting material; novel blue light emitting poly[4,4'-biphenylylene(.alpha.-Ph vinylene)])
IT 90-90-4, 4-Bromobenzophenone 51044-13-4, 4-Bromobenzyltriphenylphosphoni

um bromide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (monomer synthesis; novel blue light emitting
 poly[4,4'-biphenylylene(.alpha.-Ph vinylene)]))
 IT 271779-47-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (monomer; novel blue light emitting
 poly[4,4'-biphenylylene(.alpha.-Ph vinylene)]))
 IT 443795-66-2P 443911-79-3P
 RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic
 preparation); PREP (Preparation); USES (Uses)
 (novel blue light emitting poly[4,4'-
 biphenylylene(.alpha.-Ph vinylene)]))
 IT 366-18-7, 2,2'-Bipyridine 603-35-0, Triphenylphosphine, uses
 RL: CAT (Catalyst use); USES (Uses)
 (polymn. catalyst system; novel blue light
 emitting poly[4,4'-biphenylylene(.alpha.-Ph vinylene)]))
 IT 7440-66-6, Zinc, uses
 RL: CAT (Catalyst use); USES (Uses)
 (powder, polymn. catalyst system; novel blue light
 emitting poly[4,4'-biphenylylene(.alpha.-Ph vinylene)]))
 IT 50926-11-9, ITO
 RL: DEV (Device component use); USES (Uses)
 (electrode; novel blue light emitting
 poly[4,4'-biphenylylene(.alpha.-Ph vinylene)]))
 RN 50926-11-9 HCAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component	
		Registry Number	
O	x	17778-80-2	
In	x	7440-74-6	
Sn	x	7440-31-5	

IT 366-18-7, 2,2'-Bipyridine
 RL: CAT (Catalyst use); USES (Uses)
 (polymn. catalyst system; novel blue light
 emitting poly[4,4'-biphenylylene(.alpha.-Ph vinylene)]))
 RN 366-18-7 HCAPLUS
 CN 2,2'-Bipyridine (8CI, 9CI) (CA INDEX NAME)



RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 5 OF 36 HCAPLUS COPYRIGHT 2002 ACS
 AN 2002:294029 HCAPLUS
 DN 136:316681
 TI Polymers having attached luminescent metal complexes
 and devices made with such polymers
 IN Periyasamy, Mookkan; Grushin, Vladimir; Petrov, Viacheslav A.; Herron,
 Norman; Radu, Nora Sabina

PA E.I. Du Pont De Nemours and Company, USA
 SO PCT Int. Appl., 58 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002031896	A2	20020418	WO 2001-US31449	20011009
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
PRAI	US 2000-238974P	P	20001010		
OS	MARPAT	136:316681			
AB	Org. electronic devices are described which comprise an emitting layer which comprises .gtoreq.1 functionalized polymer having a plurality of first-type functional groups, at least a portion of the functional groups being coordinated to .gtoreq.1 metal or metal-contg. complex, or in which the groups have a charge and are assocd. with .gtoreq.1 metal complex having an opposite charge. The emitting layers may also include org. charge transport materials. Selected polymer-metal complexes and salts are also described.				
IC	ICM H01L051-30				
CC	73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties) Section cross-reference(s): 38, 76				
ST	metal complex polymer salt electroluminescent device; metal polymer complex electroluminescent device				
IT	Group VIII element compounds RL: DEV (Device component use); USES (Uses) (Group 10; metal-polymer complexes and salts and devices employing them)				
IT	Polyanilines RL: DEV (Device component use); USES (Uses) (charge transport material; metal-polymer complexes and salts and devices employing them)				
IT	Group VIII element compounds RL: DEV (Device component use); USES (Uses) (cobalt-group; metal-polymer complexes and salts and devices employing them)				
IT	Luminescent substances (electroluminescent; metal-polymer complexes and salts and devices employing them)				
IT	Group VIII element compounds RL: DEV (Device component use); USES (Uses) (iron-group; metal-polymer complexes and salts and devices employing them)				
IT	Electroluminescent devices (metal-polymer complexes and salts and devices employing them)				
IT	Group IB element compounds Group IIB element compounds				

Group IIIA element compounds
Group VIIB element compounds
Rare earth complexes
RL: DEV (Device component use); USES (Uses)
(**metal-polymer** complexes and salts and devices
employing them)

IT 25067-59-8, Polyvinylcarbazole 58328-31-7 65181-78-4,
N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-(1,1'-biphenyl)-4,4'-diamine
70895-80-6, Bis[4-(N,N-diethylamino)-2-methylphenyl](4-
methylphenyl)methane
RL: DEV (Device component use); USES (Uses)
(charge transport material; **metal-polymer** complexes
and salts and devices employing them)

IT 7439-88-5D, Iridium, compds., reaction products with
polymers 7440-04-2D, Osmium, compds., reaction products
with **polymers** 7440-05-3D, Palladium, compds., reaction
products with **polymers** 7440-06-4D, Platinum, compds.,
reaction products with **polymers** 7440-16-6D, Rhodium,
compds., reaction products with **polymers** 7440-18-8D,
Ruthenium, compds., reaction products with **polymers**
7440-27-9D, Terbium, compds., reaction products with
polymers 7440-30-4D, Thulium, compds., reaction products with
polymers 7440-57-5D, Gold, compds., reaction products
with **polymers** 7440-66-6D, Zinc, compds., reaction products
with **polymers** 40231-87-6D, reaction products with
polymers 176763-58-9D, reaction products with **polymers**
412040-84-7D, reaction products with **polymers**
RL: DEV (Device component use); USES (Uses)
(**metal-polymer** complexes and salts and devices
employing them)

IT 126213-51-2, Poly(3,4-ethylenedioxythiophene)
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
(**metal-polymer** complexes and salts and devices
employing them)

IT 14054-87-6DP, reaction products with **polymers** 14592-81-5DP,
reaction products with **polymers** 26284-14-0DP, reaction
products with **metal** compds. 26355-01-1DP, 2-Hydroxyethyl
methacrylate-methyl methacrylate **copolymer**, reaction products
with **metal** compds. 56315-94-7DP, 2-Hydroxyethyl
methacrylate-isobutyl methacrylate **copolymer**, reaction products
with **metal** compds. 66028-15-7DP, 2-(Dimethylamino)ethyl
methacrylate-Isobutylmethacrylate **copolymer**, reaction products
with **metal** compds. 72460-28-7DP, 4,4'-
Bis(chlorocarbonyl)-2,2'-bipyridine, reaction products with
polymers and **metal** compds. 190370-38-8DP, reaction
products with **polymers** 387859-66-7DP, reaction products with
polymers 412032-55-4DP, reaction products with
electron-transporting compds. and **metal** compds. 412032-56-5DP,
reaction products with **polymers** and **metal** compds.
412032-57-6DP, reaction products with electron-transporting compds. and
metal compds. 412032-58-7DP, reaction products with
metal compds. 412032-59-8DP, reaction products with
metal compds. 412032-60-1DP, reaction products with
metal compds.
RL: DEV (Device component use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
(**metal-polymer** complexes and salts and devices
employing them)

IT 95-54-5, 1,2-Diaminobenzene, reactions 97-93-8, Triethylaluminum,
reactions 694-83-7, 1,2-Diaminocyclohexane 1765-93-1,

4-Fluorophenylboronic acid 2695-37-6, 4-Styrenesulfonic acid sodium salt
3796-23-4 10025-83-9, Iridium trichloride 32503-27-8,
Tetrabutylammonium hydrogen sulfate 37942-07-7, 3,5-Di-tert-butyl-2-
hydroxybenzaldehyde

RL: RCT (Reactant); RACT (Reactant or reagent)
(metal-polymer complexes and salts and devices
employing them)

IT 37295-36-6P 66028-15-7P, 2-(Dimethylamino)ethyl methacrylate-
Isobutylmethacrylate copolymer 103595-82-0P 190370-38-8P
370878-58-3P 387859-66-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(metal-polymer complexes and salts and devices
employing them)

IT 7439-88-5D, Iridium, compds., reaction products with
polymers 7440-04-2D, Osmium, compds., reaction products
with polymers 7440-05-3D, Palladium, compds., reaction
products with polymers 7440-06-4D, Platinum, compds.,
reaction products with polymers 7440-16-6D, Rhodium,
compds., reaction products with polymers 7440-18-8D,
Ruthenium, compds., reaction products with polymers
7440-27-9D, Terbium, compds., reaction products with
polymers 7440-57-5D, Gold, compds., reaction products
with polymers

RL: DEV (Device component use); USES (Uses)
(metal-polymer complexes and salts and devices
employing them)

RN 7439-88-5 HCPLUS

CN Iridium (8CI, 9CI) (CA INDEX NAME)

Ir

RN 7440-04-2 HCPLUS

CN Osmium (8CI, 9CI) (CA INDEX NAME)

Os

RN 7440-05-3 HCPLUS

CN Palladium (8CI, 9CI) (CA INDEX NAME)

Pd

RN 7440-06-4 HCPLUS

CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

RN 7440-16-6 HCPLUS

CN Rhodium (8CI, 9CI) (CA INDEX NAME)

Rh

RN 7440-18-8 HCAPLUS
CN Ruthenium (8CI, 9CI) (CA INDEX NAME)

Ru

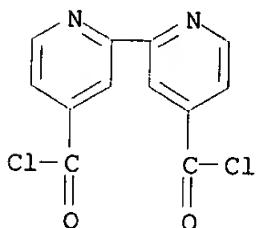
RN 7440-27-9 HCAPLUS
CN Terbium (8CI, 9CI) (CA INDEX NAME)

Tb

RN 7440-57-5 HCAPLUS
CN Gold (8CI, 9CI) (CA INDEX NAME)

Au

IT 72460-28-7DP, 4,4'-Bis(chlorocarbonyl)-2,2'-bipyridine, reaction products with polymers and metal compds.
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(metal-polymer complexes and salts and devices employing them)
RN 72460-28-7 HCAPLUS
CN [2,2'-Bipyridine]-4,4'-dicarbonyl dichloride (9CI) (CA INDEX NAME)

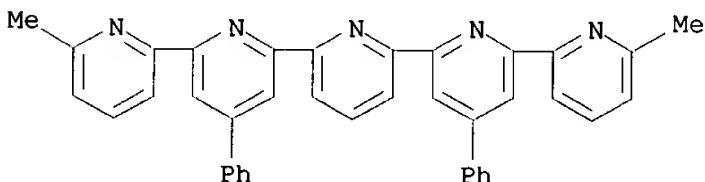


L58 ANSWER 6 OF 36 HCAPLUS COPYRIGHT 2002 ACS
AN 2002:254681 HCAPLUS
DN 137:34113
TI Study of 2,6-linked quinquepyridine derivative as luminescence materials
AU Fu, Y. J.; Wong, T. K. S.; Wang, G. M.; Hu, X.; Buddhudu, S.; Zhang, H.
X.; Gao, Z. S.; Jiang, M. H.
CS Division of Microelectronics, School of Electrical & Electronic
Engineering, Nanyang Technological University, Singapore, 639798,
Singapore
SO Materials Research Society Symposium Proceedings (2001), 660(Organic
Electronic and Photonic Materials and Devices), JJ5.9/1-JJ5.9/6
CODEN: MRSPDH; ISSN: 0272-9172
PB Materials Research Society
DT Journal

LA English
AB Both photoluminescence (PL) and electroluminescence (EL) properties of 6,6''''-dimethyl-4', 4'''-diphenyl-2,2':6',2'':6'',2'''':6''',2''''-quinquepyridine (DMDPQPY), a 2,6-linked oligopyridine deriv., have been investigated. Two maxima are obsd. from its PL spectra in solid state, but only one peak appears in its PL in solns. Emission from the single layer device with indium-tin-oxide (ITO) and Al as the resp. anode and cathode (ITO/DMDPQPY/Al) is very weak, but introduction of a hole-transporting layer poly(vinylcarbazole) (PVK), in the double layer device (ITO/PVK/ DMDPQPY/Al), increases the luminance significantly indicating a better charge balance. Two peaks appear in the EL spectra, one at 419 nm and another at 536 nm, ascribed to PVK and DMDPQPY resp.
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 37, 73
ST quinquepyridine deriv luminescent material photoluminescence
electroluminescence; dimethyldiphenylquinquepyridine luminescent
material photoluminescence electroluminescence
IT Luminescent substances
(electroluminescent; photoluminescence and
electroluminescence of 2,6-linked quinquepyridine deriv. as
luminescence materials for electroluminescent devices)
IT Electroluminescent devices
Luminescence
Luminescence, electroluminescence
Luminescent substances
(photoluminescence and electroluminescence of 2,6-linked
quinquepyridine deriv. as luminescence materials for
electroluminescent devices)
IT 7429-90-5, Aluminum, uses
RL: DEV (Device component use); USES (Uses)
(ITO-poly(vinylcarbazole) devices; photoluminescence and
electroluminescence of 2,6-linked quinquepyridine deriv. as
luminescence materials for electroluminescent devices)
IT 50926-11-9, ITO
RL: DEV (Device component use); USES (Uses)
(aluminum-poly(vinylcarbazole) devices; photoluminescence and
electroluminescence of 2,6-linked quinquepyridine deriv. as
luminescence materials for electroluminescent devices)
IT 25067-59-8, Poly(vinylcarbazole)
RL: DEV (Device component use); USES (Uses)
(hole-transport material, aluminum-ITO devices; photoluminescence and
electroluminescence of 2,6-linked quinquepyridine deriv. as
luminescence materials for electroluminescent devices)
IT 155695-89-9, 6,6''''-Dimethyl-4', 4'''-diphenyl-
2,2':6',2'':6'',2'''':6''',2''''-quinquepyridine
RL: DEV (Device component use); PRP (Properties); TEM (Technical or
engineered material use); USES (Uses)
(photoluminescence and electroluminescence of 2,6-linked
quinquepyridine deriv. as luminescence materials for
electroluminescent devices)
IT 50926-11-9, ITO
RL: DEV (Device component use); USES (Uses)
(aluminum-poly(vinylcarbazole) devices; photoluminescence and
electroluminescence of 2,6-linked quinquepyridine deriv. as
luminescence materials for electroluminescent devices)
RN 50926-11-9 HCAPLUS
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component		Ratio		Component
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		Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5
IT	155695-89-9, 6,6''''-Dimethyl-4', 4''''-diphenyl-2,2':6',2'':6'',2'''':6''',2'''''-quinquepyridine RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (photoluminescence and electroluminescence of 2,6-linked quinquepyridine deriv. as luminescence materials for electroluminescent devices)	
RN	155695-89-9 HCPLUS	
CN	2,2':6',2'':6'',2'''':6''',2'''''-Quinquepyridine, 6,6''''-dimethyl-4',4''''-diphenyl- (9CI) (CA INDEX NAME)	



RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

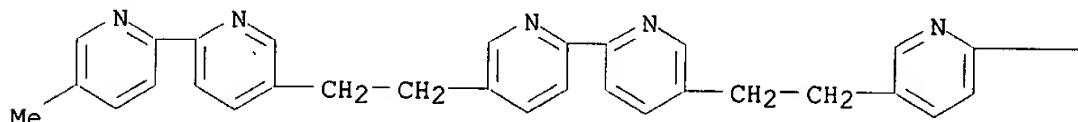
L58 ANSWER 7 OF 36 HCPLUS COPYRIGHT 2002 ACS
 AN 2002:142130 HCPLUS
 DN 137:109590
 TI Synthesis and optical properties of derivatives of oligo-bipyridines
 AU Fu, You Jun; Wong, Terence Kin Shun; Wang, Guangming; Hu, Xiao
 CS Division of Microelectronics, School of Electrical & Electronic Engineering, Nanyang Technological University, 639798, Singapore
 SO Proceedings of SPIE-The International Society for Optical Engineering (2001), 4594(Design, Fabrication, and Characterization of Photonic Devices II), 374-379
 CODEN: PSISDG; ISSN: 0277-786X
 PB SPIE-The International Society for Optical Engineering
 DT Journal
 LA English
 AB Two oligo-bipyridine derivs. (L1, L2) which belong to partially conjugated oligomers in structure, were synthesized and found to show strong photoluminescence. In its as-obtained powder states, L1 shows an emission at 403 nm under the excitation of 365 nm; while when mixed with KBr, it shows one emission peak at 402 nm and one shoulder at 389 nm; and in its chloroform soln., it emits with two peaks at 344 nm and 356 nm. The as-obtained powder state of L2 emits with a peak at 418 nm under the excitation of 367 nm, while its doped state in KBr plate has two emissions at 403 nm and 423 nm; in its chloroform soln., two peaks at 393 nm and 414 nm appear under the excitation of 364 nm light. Films of L2 fabricated by vacuum evapn. emit at 406 nm and 428 nm. Both compds. show emission in the range of deep blue or violet color. It is proposed that one way to obtain blue emitting materials is to shorten the conjugation length in the **polymeric** and oligomeric structures. Silver complex of L1 show emission at 445 nm under the excitation of 348 nm. **EL**
 properties of L2 were studied preliminarily.
 CC 35-8 (Chemistry of Synthetic High **Polymers**)

Section cross-reference(s): 73, 76
 ST photoluminescence **electroluminescence light emitting device** oligo bipyridine synthesis
 IT Transition metal complexes
 RL: PRP (Properties)
 (bipyridine; synthesis and optical properties of derivs. of oligo-bipyridines)
 IT **Electroluminescent devices**
 Luminescence
 Luminescence, **electroluminescence**
 (synthesis and optical properties of derivs. of oligo-bipyridines)
 IT 7429-90-5, Aluminum, uses **50926-11-9**, ITO
 RL: DEV (Device component use); USES (Uses)
 (electrode; synthesis and optical properties of derivs. of oligo-bipyridines)
 IT **149084-46-8 188396-90-9 188396-92-1**
 RL: PRP (Properties)
 (synthesis and optical properties of derivs. of oligo-bipyridines)
 IT **50926-11-9**, ITO
 RL: DEV (Device component use); USES (Uses)
 (electrode; synthesis and optical properties of derivs. of oligo-bipyridines)
 RN 50926-11-9 HCAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

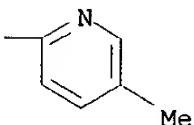
Component	Ratio	Component
		Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT **149084-46-8 188396-92-1**
 RL: PRP (Properties)
 (synthesis and optical properties of derivs. of oligo-bipyridines)
 RN 149084-46-8 HCAPLUS
 CN 2,2'-Bipyridine, 5,5'-bis[2-(5'-methyl[2,2'-bipyridin]-5-yl)ethyl]- (9CI)
 (CA INDEX NAME)

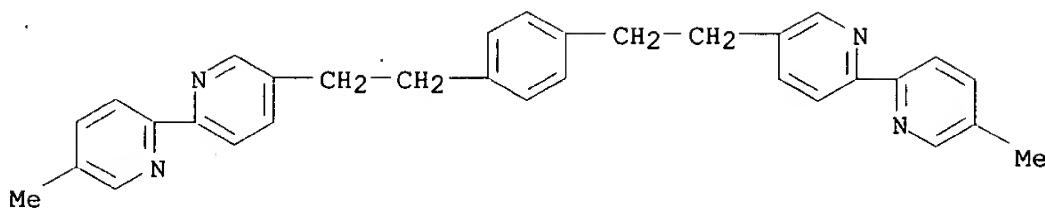
PAGE 1-A



PAGE 1-B



RN 188396-92-1 HCAPLUS
 CN 2,2'-Bipyridine, 5,5''-(1,4-phenylenedi-2,1-ethanediyl)bis[5'-methyl- (9CI) (CA INDEX NAME)]



RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L58 ANSWER 8 OF 36 HCAPLUS COPYRIGHT 2002 ACS
 AN 2002:2824 HCAPLUS
 DN 136:45347
 TI Light-transforming **polymeric** composition
 IN Anisimov, V. M.; Anisimova, O. M.; Zaychenko, N. L.; Mardaleyshvili, I. R.; Marevtsev, V. S.; Ostrovskii, M. A.; Shienok, A. I.
 PA Institut Khimicheskoi Fiziki RAN i.m. N. N. Semenova, Russia
 SO Russ., No pp. given, 7
 CODEN: RUXXE7
 DT Patent
 LA Russian
 FAN.CNT 1
- | | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|--|--|----------|-----------------|----------|
| PI | RU 2153519 | C2 | 20000727 | RU 1998-118208 | 19981005 |
| AB | Light-converting polymeric compns. are described which comprise active additive based on org. and/or inorg. salts of europium 0.001-10 wt.% and .gtoreq.1 compds. selected from nitrogen and/or oxygen-contg. heterocycles, oxides of nitrogen, phosphorus- and sulfur-contg. compds. 0.001-10 wt.% with thermoplastic (co) polymers making up the the balance. The polymer compns. are effective absorbers of UV radiation. They absorb at least 90% of UV irradn. incident on them and effectively transform it into red light. Application to films or glasses for use in green houses and hot houses and the creation of decorative members and advertising is indicated. | | | | |
| IC | ICM | C09K011-06 | | | |
| CC | ICS | C08K005-00; A01N059-00; A01N043-00; A01N037-00 | | | |
| ST | 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties) | | | | |
| IT | eupropium salt polymeric light converting compn | | | | |
| IT | Luminescent substances
(europium salt-contg. light-converting polymeric compns.) | | | | |
| IT | Acrylic polymers , uses | | | | |
| | Polyamides, uses | | | | |
| | Polycarbonates, uses | | | | |
| | Polyesters, uses | | | | |
| | RL: DEV (Device component use); USES (Uses) | | | | |
| | (europium salt-contg. light-converting polymeric compns.) | | | | |
| IT | 66-71-7, 1,10-Phenanthroline 78-50-2, Trioctylphosphine oxide 119-91-5, 2,2'-Biquinoline 231-23-2, 1,4,5,8-Tetraazaphenanthrene 245-37-4, 4,5-Diazafluorene 254-60-4, 1,8-Naphthyridine 295-37-4, Cyclam 296-35-5, Hexacyclen 366-18-7, 2,2'-Bipyridine 508-32-7, Cyclene 553-26-4, 4,4'-Bipyridine 791-28-6, Triphenylphosphine oxide 814-29-9, Tributylphosphine oxide 1148-79-4, 2,2':6',2''-Terpyridine 1251-85-0 1308-96-9, Europium oxide 1600-44-8, Tetramethylene sulfoxide 1891-19-6 | | | | |

2423-65-6, Pyrazine N-Oxide 3252-61-7, Europium thiocyanate 3682-35-7,
 2,4,6-Tri(2-pyridinyl)-1,3,5-triazine 7091-25-0 **7275-43-6**,
 2,2'-Bipyridine N,N'-dioxide 9002-86-2, Polyvinyl chloride 9002-88-4,
 Polyethylene 9003-07-0, Polypropylene 9003-53-6, Polystyrene
 9004-36-8, Acetobutyrate cellulose 9010-79-1, Ethylene-propylene
copolymer 9011-14-7, PMMA **10025-76-0**, Europium
 chloride **10138-01-9**, Europium nitrate 10198-96-6,
 3,3'-Bipyridazine 10199-00-5, 2,2'-Bipyrazine 13537-22-9 14098-44-3,
 Benzo-15-crown-5 14187-32-7, Dibenzo-18-crown-6 15130-47-9
 16069-36-6, Dicyclohexano-18-crown-6 16922-05-7, Europium acetate
 17455-13-9, 18-Crown-6 17999-93-8, 1,1'-Biisoquinoline 23978-09-8,
 2,2,2-Cryptand 24120-47-6 24937-16-4, Poly[imino(1-oxo-1,12-
 dodecanediyl)] 24937-78-8, Ethylene-vinyl acetate **copolymer**
 24968-12-5, Poly(1,4-butylene terephthalate) 25038-54-4, Nylon 6, uses
 25038-74-8 26062-94-2, Poly(1,4-butylene terephthalate) 26733-41-5,
 Europium salicylate 31364-42-8, 2,2,1-Cryptand 33100-27-5, 15-Crown-5
33421-43-1, 2,2'-Bipyridine N-Oxide 34671-83-5,
 2,2'-Dipyrimidine 35202-46-1, 3,3'-Biisoquinoline 58770-15-3
 61413-96-5 63972-19-0, Dioxocyclam 72799-24-7, 1,10-Phenanthroline
 N,N'-dioxide 74912-23-5 78914-16-6 104368-22-1 146716-34-9
 171568-97-1 380329-12-4 380329-15-7

RL: DEV (Device component use); USES (Uses)

(europium salt-contg. light-converting **polymeric** compns.)

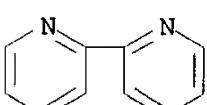
IT **366-18-7**, 2,2'-Bipyridine **1148-79-4**,
 2,2':6',2''-Terpyridine **7275-43-6**, 2,2'-Bipyridine N,N'-dioxide
10025-76-0, Europium chloride **10138-01-9**, Europium
 nitrate **33421-43-1**, 2,2'-Bipyridine N-Oxide

RL: DEV (Device component use); USES (Uses)

(europium salt-contg. light-converting **polymeric** compns.)

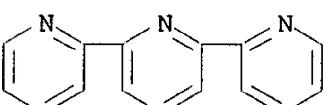
RN **366-18-7** HCAPLUS

CN 2,2'-Bipyridine (8CI, 9CI) (CA INDEX NAME)



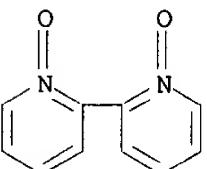
RN **1148-79-4** HCAPLUS

CN 2,2':6',2''-Terpyridine (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

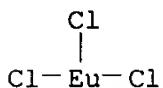


RN **7275-43-6** HCAPLUS

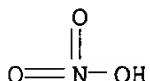
CN 2,2'-Bipyridine, 1,1'-dioxide (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 10025-76-0 HCAPLUS
CN Europium chloride (EuCl₃) (6CI, 8CI, 9CI) (CA INDEX NAME)

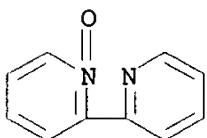


RN 10138-01-9 HCAPLUS
CN Nitric acid, europium(3+) salt (8CI, 9CI) (CA INDEX NAME)



1/3 Eu(III)

RN 33421-43-1 HCAPLUS
CN 2,2'-Bipyridine, 1-oxide (6CI, 8CI, 9CI) (CA INDEX NAME)



L58 ANSWER 9 OF 36 HCAPLUS COPYRIGHT 2002 ACS
AN 2001:790479 HCAPLUS
DN 136:86162
TI The role of ruthenium and rhenium diimine complexes in conjugated polymers that exhibit interesting opto-electronic properties
AU Ng, Po King; Gong, Xiong; Chan, Suk Hang; Lam, Lillian Sze Man; Chan, Wai Kin
CS Department of Chemistry, University of Hong Kong, Hong Kong, Hong Kong
SO Chemistry--A European Journal (2001), 7(20), 4358-4367
CODEN: CEUJED; ISSN: 0947-6539
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
AB This paper reports the synthesis and opto-electronic properties of different conjugated polymers that contain the diimine complexes of ruthenium or rhenium. Conjugated poly(phenylene vinylene)s that contain arom. 1,3,4-oxadiazole and 2,2'-bipyridine units on the main chain were synthesized by the palladium catalyzed olefinic coupling reaction. Other types of polymers based on 1,10-phenanthroline bis(2,2-bipyridyl) ruthenium(II) or chloro tricarbonyl rhenium(I) complexes were also synthesized by the same reaction. In general, these polymers exhibit two absorption bands due to the $\pi - \pi^*$ transition of the conjugated main chain and the $d - \pi^*$ metal-to-ligand charge-transfer transition of the metal complex. As a result, the photosensitivity of the polymers beyond 500 nm was

enhanced. Charge-carrier mobility measurements showed that the presence of metal complexes could facilitate the charge-transport process, and the enhancement in carrier mobility was dependent on the metal content in the polymer. In addn., we have also demonstrated that the ruthenium complex could act as both photosensitizer and light emitter. Photovoltaic cells were constructed, and they were subjected to irradn. with a xenon arc lamp. Under illumination, the short circuit current and the open circuit voltage were measured to be 0.05 mA cm⁻² and 0.35 V, resp. The polymers were fabricated into single-layer emitting devices, and light emission was obsd. when the device was subjected to forward bias. The max. luminance was detd. to be 300 cd m⁻², and the external quantum efficiency was approx. 0.05 to 0.2%. Although the efficiency was relatively low when compared with other devices based on org. materials, we have demonstrated the first examples of using transition metal complexes for both photovoltaic and light-emitting applications.

- CC 35-6 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 73, 76
- IT Polymers, preparation
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (conjugated; role of ruthenium and rhenium diimine complexes in conjugated polymers)
- IT Charge transfer complexes
 RL: PRP (Properties)
 (intramol.; role of ruthenium and rhenium diimine complexes in conjugated polymers)
- IT Hole mobility
 (mobilities of; role of ruthenium and rhenium diimine complexes in conjugated polymers)
- IT Cyclic voltammetry
 Electric current-potential relationship
 Luminescence
 Luminescence, electroluminescence
 (role of ruthenium and rhenium diimine complexes in conjugated polymers)
- IT Poly(arylenealkenylenes)
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (role of ruthenium and rhenium diimine complexes in conjugated polymers)
- IT Electroluminescent devices
 (single-layer; role of ruthenium and rhenium diimine complexes in conjugated polymers)
- IT 50926-11-9, ITO
 RL: DEV (Device component use); USES (Uses)
 (electrode; role of ruthenium and rhenium diimine complexes in conjugated polymers)
- IT 1802-30-8, 2,2'-Bipyridine-5,5'-dicarboxylic acid
 6813-38-3, 2,2'-Bipyridine-4,4'-dicarboxylic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (ligand synthesis; role of ruthenium and rhenium diimine complexes in conjugated polymers)
- IT 50907-23-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (ligand synthesis; role of ruthenium and rhenium diimine complexes in conjugated polymers)
- IT 385767-23-7
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (ligand; role of ruthenium and rhenium diimine complexes in conjugated

polymers)

IT 385767-22-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (ligand; role of ruthenium and rhenium diimine complexes in conjugated polymers)

IT 202667-34-3P 264916-72-5P 386706-87-2P 386706-89-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (metal complex monomer; role of ruthenium and rhenium diimine complexes in conjugated polymers)

IT 2923-28-6, Silver trifluoromethanesulfonate 19542-80-4
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (monomer synthesis; role of ruthenium and rhenium diimine complexes in conjugated polymers)

IT 216964-54-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (monomer synthesis; role of ruthenium and rhenium diimine complexes in conjugated polymers)

IT 78-30-8P, Tri-o-tolylphosphate 102-82-9P, Tri-n-butylamine
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (polymn. catalyst; role of ruthenium and rhenium diimine complexes in conjugated polymers)

IT 385767-24-8P 385767-25-9P 385767-26-0P 386706-90-7P 386706-91-8P
 386706-92-9P 386706-94-1P 386706-95-2P 386706-97-4P 386706-99-6P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (role of ruthenium and rhenium diimine complexes in conjugated polymers)

IT 623-00-7, 1-Bromo-4-Cyanobenzene 14099-01-5, Rhenium pentacarbonyl chloride 17084-13-8, Potassium hexafluorophosphate 26628-22-8, Sodium azide 100125-12-0, 3,8-Dibromo-1,10-phenanthroline
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (role of ruthenium and rhenium diimine complexes in conjugated polymers)

IT 50926-11-9, ITO
 RL: DEV (Device component use); USES (Uses)
 (electrode; role of ruthenium and rhenium diimine complexes in conjugated polymers)

RN 50926-11-9 HCAPLUS

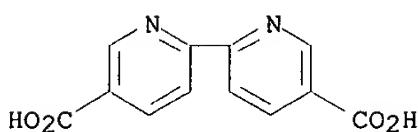
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component	
			Registry Number
O	x		17778-80-2
In	x		7440-74-6
Sn	x		7440-31-5

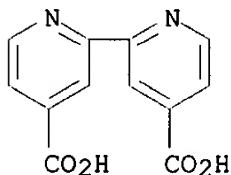
IT 1802-30-8, 2,2'-Bipyridine-5,5'-dicarboxylic acid
 6813-38-3, 2,2'-Bipyridine-4,4'-dicarboxylic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (ligand synthesis; role of ruthenium and rhenium diimine complexes in conjugated polymers)

RN 1802-30-8 HCAPLUS

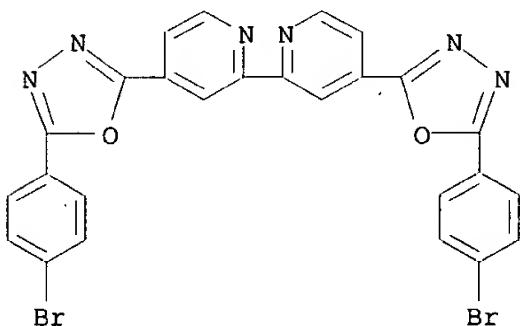
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid (8CI, 9CI) (CA INDEX NAME)



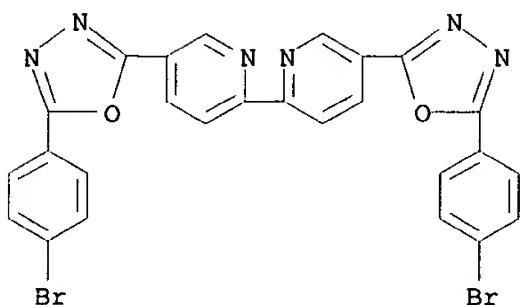
RN 6813-38-3 HCPLUS
CN [2,2'-Bipyridine]-4,4'-dicarboxylic acid (8CI, 9CI) (CA INDEX NAME)



IT 385767-23-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(ligand; role of ruthenium and rhenium diimine complexes in conjugated
polymers)
RN 385767-23-7 HCPLUS
CN 2,2'-Bipyridine, 4,4'-bis[5-(4-bromophenyl)-1,3,4-oxadiazol-2-yl]- (9CI)
(CA INDEX NAME)



IT 385767-22-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(ligand; role of ruthenium and rhenium diimine complexes in conjugated
polymers)
RN 385767-22-6 HCPLUS
CN 2,2'-Bipyridine, 5,5'-bis[5-(4-bromophenyl)-1,3,4-oxadiazol-2-yl]- (9CI)
(CA INDEX NAME)



RE.CNT 63 THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 10 OF 36 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:729805 HCAPLUS

DN 135:295943

TI **Polymeric** fluorescent substance, production method thereof, and **polymer light-emitting** device using the same

IN Doi, Shuji; Tsubata, Yoshiaki

PA Sumitomo Chemical Co., Ltd., Japan

SO Eur. Pat. Appl., 38 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1138746	A1	20011004	EP 2001-302966	20010329
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001342459	A2	20011214	JP 2001-100621	20010330
	US 2002027623	A1	20020307	US 2001-820946	20010330

PRAI JP 2000-98717 A 20000331

AB **Polymeric** fluorescent substances are described which have a polystyrene-reduced no.-av. mol. wt. of 103 to 108, and comprises in the main chain .gtoreq.1 repeating units described by the general formula -Arl-(CR1:CR2)n- (Arl = a C6-60 arylene group, a C4-60 heterocyclic group, or a group comprising a metal complex having, as a ligand, .gtoreq.1 C4-60 org. compds.; Ar1 may have .gtoreq.1 substituents; each of R1 and R2 = independently selected H, C1-20 alkyl, C6-60 aryl, C4-60 heterocyclic, and cyano groups; and n = 0 or 1) wherein 0.05-10 mol% of all repeating units in the **polymeric** fluorescent substance have branching **Polymeric** chains. Methods for producing the materials are also described which entail reacting appropriate precursors. **Light-emitting** devices employing the substances and displays and light sources employing the devices are also described.

IC ICM C09K011-06

ICS C08G061-02

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

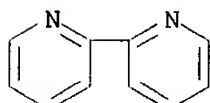
Section cross-reference(s): 38, 76

ST **Polymeric** fluorescent substance prodn **light-emitting** device

IT Phosphors

(electroluminescent; **Polymeric** fluorescent substances and their prodn. and **Polymer light-emitting** devices using them)

IT **Electroluminescent devices**
Fluorescent substances
 (polymeric fluorescent substances and their prodn. and
 polymer light-emitting devices using them)
 IT 366-18-7DP, 2,2'-Bipyridyl, **polymer** with pyridineiridium
 and dioctyldibromofluorene 636-28-2DP, **polymer** with
 diocylfluorene-dioxaborolane and dioctylbromofluorene 198964-46-4DP,
 polymer with diocylfluorene-dioxaborolane and tetrabromobenzene
 198964-46-4DP, **polymer** with pyridineiridium and bipyridyl
 210347-49-2DP, **polymer** with diocylbromofluorene and
 tetrabromobenzene 364627-16-7P 364627-29-2P 364627-42-9DP,
 polymer with diocylfluorene-dioxaborolane and dioctylbromofluorene
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP
 (Preparation); USES (Uses)
 (polymeric fluorescent substances and their prodn. and
 polymer light-emitting devices using them)
 IT 1008-89-5, 2-Phenylpyridine 7726-95-6, Bromine, reactions 15635-87-7
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (polymeric fluorescent substances and their prodn. and
 polymer light-emitting devices using them)
 IT 364732-76-3P, 2-(Bromophenyl)pyridine 364732-77-4P, Tris[2-
 (bromophenyl)pyridine]iridium(III) 364732-79-6P, Bis[2-
 (phenyl)pyridine]mono[2-(bromophenyl)pyridine]iridium(III)
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (polymeric fluorescent substances and their prodn. and
 polymer light-emitting devices using them)
 IT 366-18-7DP, 2,2'-Bipyridyl, **polymer** with pyridineiridium
 and dioctyldibromofluorene
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP
 (Preparation); USES (Uses)
 (polymeric fluorescent substances and their prodn. and
 polymer light-emitting devices using them)
 RN 366-18-7 HCPLUS
 CN 2,2'-Bipyridine (8CI, 9CI) (CA INDEX NAME)



RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 11 OF 36 HCPLUS COPYRIGHT 2002 ACS
 AN 2001:636466 HCPLUS
 DN 135:349769
 TI Tervalent Conducting **Polymers** with Tailor-Made Work Functions:
 Preparation, Characterization, and Applications as Cathodes in
 Electroluminescent Devices
 AU Bloom, Corey J.; Elliott, C. Michael; Schroeder, Paul G.; France, C.
 Brian; Parkinson, Bruce A.
 CS Department of Chemistry, Colorado State University, Fort Collins, CO,
 80523, USA
 SO Journal of the American Chemical Society (2001), 123(38), 9436-9442
 CODEN: JACSAT; ISSN: 0002-7863
 PB American Chemical Society
 DT Journal

LA English

AB A series of conducting polymers have been prep'd. through thermal polymn. of transition-metal diimine complexes. The as-polymd. material is electrochem. converted into its formally zerovalent form. Due to the proximity of the half-wave potentials of the formal 1+/0 and 0/1- couples, there is substantial disproportionation of the redox sites at room temp., resulting in a conductive tervalent mixed-valent material. The redox processes that give rise to this mixed-valent material are predominantly ligand-based, and therefore are highly sensitive to substitution on the ligand periphery. Soln. redox chem. of the monomer can be used to accurately predict the work function of the corresponding zerovalent conducting polymer, which has been verified by UPS. Many of these materials have esp. low work functions (<3.6 eV) making them appropriate materials to use as cathode materials in org. light-emitting devices (OLEDs). Working examples of tris(8-hydroxyquinoline)aluminum(III)-based OLEDs have been fabricated using one of these polymers as a cathode.

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST Section cross-reference(s): 38, 72, 76

IT tervalent conducting polymers ruthenium diimine complexes electroluminescence device

IT Electroluminescent devices
(application of tervalent conducting polymers with tailor-made work functions in)

IT Transition metal complexes
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(diimine; thermal polymn. of transition-metal diimine complexes in prep'n. of conducting polymers with tailor-made work functions)

IT Imines
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(diimines, transition metal complexes; thermal polymn. of transition-metal diimine complexes in prep'n. of conducting polymers with tailor-made work functions)

IT Cathodes
(for electroluminescent devices from thermally polymd. transition-metal diimine complexes)

IT Electric current-potential relationship
(of aluminum tris-quinoline based electroluminescent device)

IT Cyclic voltammetry
(of glassy carbon electrode modified with ruthenium contg. diimine complex polymer in acetonitrile contg. Bu₄NPF₆)

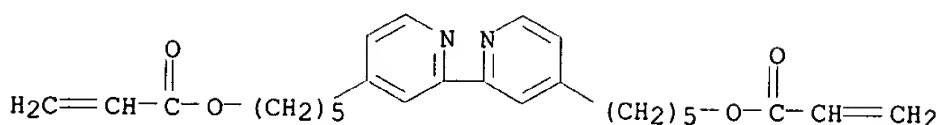
IT Work function
(prep'n. and application of tervalent conducting polymers with tailor-made work functions in electroluminescent devices)

IT Conducting polymers
(tervalent conducting polymers with tailor-made work functions)

IT Polymerization
(thermal; thermal polymn. of transition-metal diimine complexes in prep'n. of conducting polymers with tailor-made work functions)

IT 210902-93-5P
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PREP (Preparation); PROC (Process); USES (Uses)
(conducting polymers with tailor-made work functions formed)

by thermal polymn.)
IT 101144-64-3P
RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(conducting polymers with tailor-made work functions formed by thermal polymn. of)
IT 7440-44-0, Glassy carbon, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(glassy; cyclic voltammetry of glassy carbon electrode modified with ruthenium contg. diimine complex polymer in acetonitrile contg. Bu4NPF6)
IT 75-05-8, Acetonitrile, uses 3109-63-5, Tetrabutylammonium hexafluorophosphate
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(glassy; cyclic voltammetry of glassy carbon electrode modified with ruthenium contg. diimine complex polymer in acetonitrile contg. Bu4NPF6)
IT 371255-40-2P
RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(intermediate compd. in prepn. of transition-metal diimine complexes)
IT 371255-43-5
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(starting reactive in synthesis of transition-metal diimine complexes used in prepn. of conducting polymers with tailor-made work functions)
IT 2085-33-8
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(thermal polymn. of transition-metal diimine complexes in prepn. of conducting polymers with tailor-made work functions)
IT 371255-42-4P
RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(use of transition-metal diimine complexes in prepn. of conducting polymers with tailor-made work functions)
IT 371255-40-2P
RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); RCT (Reactant); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(intermediate compd. in prepn. of transition-metal diimine complexes)
RN 371255-40-2 HCAPLUS
CN 2-Propenoic acid, [2,2'-bipyridine]-4,4'-diyl di-5,1-pentanediyl ester (9CI) (CA INDEX NAME)

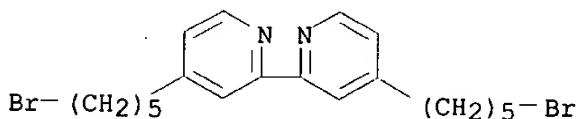


IT 371255-43-5

RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (starting reactive in synthesis of transition-metal diimine complexes used in prepn. of conducting polymers with tailor-made work functions)

RN 371255-43-5 HCPLUS

CN 2,2'-Bipyridine, 4,4'-bis(5-bromopentyl)- (9CI) (CA INDEX NAME)



RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 12 OF 36 HCPLUS COPYRIGHT 2002 ACS

AN 2001:582283 HCPLUS

DN 135:172858

TI Novel polymer, light emitting device
 material and light-emitting device using the same

IN Araki, Katsumi

PA Japan

SO U.S. Pat. Appl. Publ., 23 pp.

CODEN: USXXCO

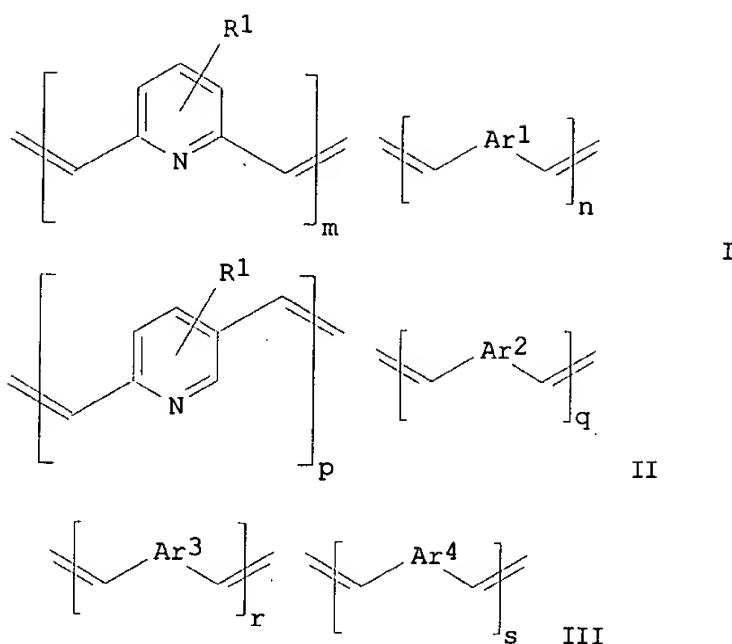
DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2001012572	A1	20010809	US 2000-732709	20001211
	JP 2001226469	A2	20010821	JP 2000-370319	20001205
	JP 2001302793	A2	20011031	JP 2000-392896	20001225
PRAI	JP 1999-351841	A	19991210		
	JP 2000-9203	A	20000118		
	JP 2000-39703	A	20000217		

GI



AB The title **polymers** are described by the general formulas I, II, or III (Ar1 = a conjugate unsatd. group exclusive of a nitrogen-contg. heterocyclic ring having .gtoreq.2 nitrogen atoms; m + n = 100; 0 .ltoeq. n < 100; R1 = H atom or a substituent with the restriction that, when Ar1 = a substituted fluorene ring or an alkoxy-substituted benzene ring, n .noteq. 50; Ar2 = a conjugate unsatd. group exclusive of a conjugate unsatd. group comprising a benzene ring substituted at .gtoreq.2 positions by a C.gtoreq.12 alkyl group, a C.gtoreq.16 alkoxy group, a C.gtoreq.12 alkoxy carbonyl group, or a C.gtoreq.12 acyloxy group, and a conjugate unsatd. group comprising a nitrogen-contg. heterocyclic ring having a 2,6-pyridinediyl group and .gtoreq.2 N atoms; 0 < p < 100; 0 < q < 100; R2 = H atom or a substituent; Ar3 = a heteroarylene group having 2 or more nitrogen atoms, Ar4 = a conjugate unsatd. group; r + s = 100 and 0 .ltoeq. s < 100, with the restriction that, when Ar3 is a 2,2'-dipyridyl-4,4'-diyl group or a 2,5-pyrazinediyl group, s .noteq. 0 or 50). **Electroluminescent** materials based on the **polymers** and **electroluminescent** devices employing the **polymers** are also described.

IC H05B033-14; C08G010-00; C08G061-12

NCL 428690000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38, 76

ST **polymer electroluminescent material; light-emitting device polymer electroluminescent material**

IT **Phosphors**

(**electroluminescent; polymers and light-emitting device materials based on them and light-emitting devices using them**)

IT **Electroluminescent devices**

(**polymers and light-emitting device materials based on them and light-emitting devices using them**)

IT Poly(arylenealkenylenes)
 RL: DEV (Device component use); USES (Uses)
 (polymers and light-emitting device
 materials based on them and light-emitting devices
 using them)

IT 50851-57-5
 RL: DEV (Device component use); USES (Uses)
 (polyethylene dioxythiophene doped with; polymers and
 light-emitting device materials based on them and
 light-emitting devices using them)

IT 7429-90-5, Aluminum, uses 37271-44-6 50926-11-9, ITO
 96638-49-2, Polyphenylene vinylene 123864-00-6, Poly(9,9-
 dioctylfluorene)
 RL: DEV (Device component use); USES (Uses)
 (polymers and light-emitting device
 materials based on them and light-emitting devices
 using them)

IT 353797-84-9P 353797-85-0P 353797-86-1P 353797-87-2P 353797-88-3P
 353797-89-4P 353797-90-7P 353797-91-8P 353797-93-0P 353797-94-1P
 353797-95-2P 353797-96-3P 353797-97-4P 353797-98-5P
 353797-99-6P 353798-00-2P 353798-01-3P 353798-02-4P
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (polymers and light-emitting device
 materials based on them and light-emitting devices
 using them)

IT 126213-51-2, Poly(3,4-ethylenedioxythiophene)
 RL: DEV (Device component use); USES (Uses)
 (polystyrene sulfonate-doped; polymers and light-
 emitting device materials based on them and light-
 emitting devices using them)

IT 50926-11-9, ITO
 RL: DEV (Device component use); USES (Uses)
 (polymers and light-emitting device
 materials based on them and light-emitting devices
 using them)

RN 50926-11-9 HCAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

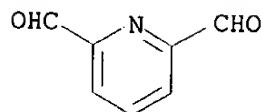
Component	Ratio	Component	
		Registry Number	
O	x		17778-80-2
In	x		7440-74-6
Sn	x		7440-31-5

IT 353797-96-3P
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (polymers and light-emitting device
 materials based on them and light-emitting devices
 using them)

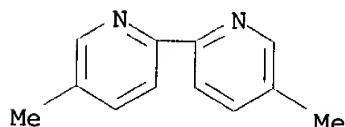
RN 353797-96-3 HCAPLUS
 CN 2,6-Pyridinedicarboxaldehyde, polymer with 5,5'-dimethyl-2,2'-bipyridine
 (9CI) (CA INDEX NAME)

CM 1

CRN 5431-44-7
CMF C7 H5 N O2



CM 2

CRN 1762-34-1
CMF C12 H12 N2

L58 ANSWER 13 OF 36 HCPLUS COPYRIGHT 2002 ACS
 AN 2001:390451 HCPLUS
 DN 134:354193
 TI Luminous composites of amphipathic block **copolymers** of ionic dendritic polyethers and linear poly(acrylic acid) and rare earth metal ions and their preparation
 IN Zhu, Linyong; Wang, Erjian; Li, Miaozen; Chang, Zhiying; Wu, Feipeng; He, Yong
 PA Institute of Photochemistry, Chinese Academy of Sciences, Peop. Rep. China
 SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 12 pp.
 CODEN: CNXXEV
 DT Patent
 LA Chinese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1270972	A	20001025	CN 2000-107567	20000519
AB	The luminous composite, useful in photo-magnifying, displaying, antiforgery, probe or sensor, is composed of a linear-dendritic diblock Amphiphiles having linear poly(acrylic acid) (PAA) as a hydrophilic block and dendritic poly(benzyl ether) as a hydrophobic block and a lanthanide-group rare earth metal ions (e.g., TbCl ₃) with a mole ratio of 5 × 10 ⁻⁷ -5 × 10 ⁻⁴ to 2 × 10 ⁻⁵ -1.2 × 10 ⁻³ . Block copolymer is prep'd. by atom transfer radical polymg. a benzyl ether dendritic oligomer bromide and Me acrylate in the presence of CuBr and 2,2'- bipyridine to form a poly(Me acrylate) (PMA)-poly(benzyl ether) dendrimer diblock copolymer (I) and hydrolyzing I to converse linear PMA block into PAA.				
IC	ICM C08L053-00				
CC	ICS C08K003-10; C09K011-06				
ST	38-3 (Plastics Fabrication and Uses) Section cross-reference(s): 73				
IT	luminous composite amphipathic block copolymer; polybenzyl ether dendritic block copolymer; polyacrylic acid block copolymer luminous composite; rare earth metal ion luminous composite				
IT	Rare earth metals, uses				

RL: CAT (Catalyst use); USES (Uses)
(atom transfer polymn. catalysts; luminous composites of amphipathic block copolymers of ionic dendritic polyethers and linear poly(acrylic acid) and rare earth metal ions)

IT Polymerization catalysts
(atom transfer; luminous composites of amphipathic block copolymers of ionic dendritic polyethers and linear poly(acrylic acid) and rare earth metal ions)

IT Optical detectors
(luminescence; luminous composites of amphipathic block copolymers of ionic dendritic polyethers and linear poly(acrylic acid) and rare earth metal ions for)

IT Luminescent substances
(luminous composites of amphipathic block copolymers of ionic dendritic polyethers and linear poly(acrylic acid) and rare earth metal ions)

IT Optical imaging devices
Optical imaging sensors
(luminous composites of amphipathic block copolymers of ionic dendritic polyethers and linear poly(acrylic acid) and rare earth metal ions for)

IT Dendritic polymers
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyether-acrylic, block, diblock; luminous composites of amphipathic block copolymers of ionic dendritic polyethers and linear poly(acrylic acid) and rare earth metal ions)

IT Luminescent substances
(probes; luminous composites of amphipathic block copolymers of ionic dendritic polyethers and linear poly(acrylic acid) and rare earth metal ions for)

IT 366-18-7, 2,2'-Bipyridine 7787-70-4, Copper bromide (CuBr)
RL: CAT (Catalyst use); USES (Uses)
(atom transfer polymn. catalysts; luminous composites of amphipathic block copolymers of ionic dendritic polyethers and linear poly(acrylic acid) and rare earth metal ions)

IT 339204-79-4DP, benzyl-terminated, hydrolyzed
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(diblock, dendritic; luminous composites of amphipathic block copolymers of ionic dendritic polyethers and linear poly(acrylic acid) and rare earth metal ions)

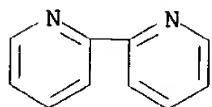
IT 10025-74-8, Dysprosium chloride 10025-76-0, Europium chloride
10042-88-3, Terbium chloride
RL: MOA (Modifier or additive use); USES (Uses)
(luminous composites of amphipathic block copolymers of ionic dendritic polyethers and linear poly(acrylic acid) and rare earth metal ions)

IT 128924-04-9 129536-41-0 339074-13-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(luminous composites of amphipathic block copolymers of ionic dendritic polyethers and linear poly(acrylic acid) and rare earth metal ions)

IT 366-18-7, 2,2'-Bipyridine
RL: CAT (Catalyst use); USES (Uses)
(atom transfer polymn. catalysts; luminous composites of amphipathic block copolymers of ionic dendritic polyethers and linear poly(acrylic acid) and rare earth metal ions)

RN 366-18-7 HCPLUS

CN 2,2'-Bipyridine (8CI, 9CI) (CA INDEX NAME)

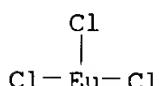


IT 10025-76-0, Europium chloride 10042-88-3, Terbium chloride

RL: MOA (Modifier or additive use); USES (Uses)
(luminous composites of amphipathic block copolymers of ionic dendritic polyethers and linear poly(acrylic acid) and rare earth metal ions)

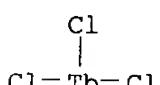
RN 10025-76-0 HCAPLUS

CN Europium chloride (EuCl₃) (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 10042-88-3 HCAPLUS

CN Terbium chloride (TbCl₃) (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L58 ANSWER 14 OF 36 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:208223 HCAPLUS

DN 134:245031

TI Monomers, polymers incorporating said monomers and their use in organic electroluminescent devices

IN Stephan, Olivier; Armand, Michel; Vial, Jean-Claude

PA Universite Joseph Fourier, Fr.

SO PCT Int. Appl., 27 pp.

CODEN: PIXXD2

DT Patent

LA French

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001019765	A1	20010322	WO 2000-FR2538	20000914
	W: CA, JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	FR 2798379	A1	20010316	FR 1999-11702	19990915
	EP 1212271	A1	20020612	EP 2000-962635	20000914
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				
	US 2002099157	A1	20020725	US 2002-98060	20020314
PRAI	FR 1999-11702	A	19990915		
	WO 2000-FR2538	W	20000914		
AB	The invention concerns a monomer A-(Q-S) _p wherein: A = an arom. or heteroarom. ring; Q = a carbonaceous or siliceous divalent radical, resp.				

corresponding to general formulas: (CR₁R₂)_n wherein: R₁, R₂ = H, alkyl, alkenyl comprising between 1 to 4 C atoms and n ranges between 4 and 24; and [O-Si(R₁R₂)]_n wherein R₁, R₂ = H, alkyl, alkenyl comprising between 1 and 4 C atoms and n ranges between 3 and 24; S = a solvating segment consisting of at least an aliph. chain comprising at least a polar heteroatom. 1<<.1toreq.p<<.1toreq.6. The invention also concerns the **polymer (homopolymer or copolymer)** incorporating said monomer, and their use in org. **electroluminescent devices**.

- IC ICM C07C043-174
ICS C09K011-06; H01L051-30; C08G061-10
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 25, 35, 36
- ST LED org **polymer** monomer transparent electrode; **electroluminescent device** org **polymer** monomer transparent electrode
- IT **Electroluminescent devices**
Substituent effects
(monomers, **polymers** incorporating said monomers and use in org. **electroluminescent devices**)
- IT Monomers
Polymers, uses
RL: DEV (Device component use); USES (Uses)
(monomers, **polymers** incorporating said monomers and use in org. **electroluminescent devices**)
- IT Polyoxyalkylenes, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(monomers, **polymers** incorporating said monomers and use in org. **electroluminescent devices**)
- IT Coating process
(spin; monomers, **polymers** incorporating said monomers and use in org. **electroluminescent devices**)
- IT Electrodes
(transparent; monomers, **polymers** incorporating said monomers and use in org. **electroluminescent devices**)
- IT 7440-31-5, Tin, uses 7440-36-0, Antimony, uses 7440-55-3, Gallium, uses 7440-67-7, Zirconium, uses 14762-94-8, Fluorine atom, uses RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(electrode dopant; monomers, **polymers** incorporating said monomers and use in org. **electroluminescent devices**)
- IT 7440-66-6, Zinc, uses
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(electrode dopant; monomers, **polymers** incorporating said monomers and use in org. **electroluminescent devices**)
- IT 1312-43-2, Indium oxide 1314-13-2, Zinc oxide, uses 1332-29-2, Tin oxide
RL: DEV (Device component use); USES (Uses)
(electrode; monomers, **polymers** incorporating said monomers and use in org. **electroluminescent devices**)
- IT 1643-19-2, Tetrabutylammonium bromide
RL: CAT (Catalyst use); USES (Uses)
(monomers, **polymers** incorporating said monomers and use in org. **electroluminescent devices**)
- IT 50926-11-9, ITO
RL: DEV (Device component use); USES (Uses)
(monomers, **polymers** incorporating said monomers and use in

org. **electroluminescent** devices)

IT 25322-68-3, Poly(ethylene oxide)
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (monomers, **polymers** incorporating said monomers and use in org. **electroluminescent** devices)

IT 329928-60-1P
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
 (monomers, **polymers** incorporating said monomers and use in org. **electroluminescent** devices)

IT 205490-79-5P 284029-61-4P 329928-57-6P
 RL: DEV (Device component use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (monomers, **polymers** incorporating said monomers and use in org. **electroluminescent** devices)

IT 16433-88-8P, 2,7-Dibromofluorene
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (monomers, **polymers** incorporating said monomers and use in org. **electroluminescent** devices)

IT 7718-54-9, Nickel dichloride, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (monomers, **polymers** incorporating said monomers and use in org. **electroluminescent** devices)

IT 110-52-1, 1,4-Dibromobutane 112-35-6, Triethyleneglycol monomethyl ether
 127-19-5, N,N-Dimethylacetamide 128-08-5, N-Bromosuccinimide
 366-18-7, 2,2'-Dipyridyl 603-35-0, Triphenyl phosphine,
 reactions 615-90-7, 2,5-Dimethylhydroquinone 865-47-4 7726-95-6,
 Bromine, reactions 19278-10-5 33454-82-9, Lithium triflate
 189367-54-2, 2,7-Dibromo-9,9-(dihexyl)fluorene
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (monomers, **polymers** incorporating said monomers and use in org. **electroluminescent** devices)

IT 144685-42-7P 329928-59-8P 329928-61-2P 329928-62-3P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (monomers, **polymers** incorporating said monomers and use in org. **electroluminescent** devices)

IT 50926-11-9, ITO
 RL: DEV (Device component use); USES (Uses)
 (monomers, **polymers** incorporating said monomers and use in org. **electroluminescent** devices)

RN 50926-11-9 HCAPLUS

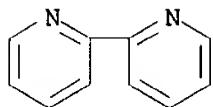
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT 366-18-7, 2,2'-Dipyridyl
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (monomers, **polymers** incorporating said monomers and use in org. **electroluminescent** devices)

RN 366-18-7 HCAPLUS

CN 2,2'-Bipyridine (8CI, 9CI) (CA INDEX NAME)

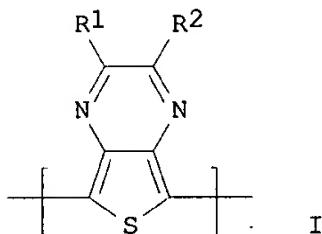


RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 15 OF 36 HCAPLUS COPYRIGHT 2002 ACS
AN 2001:57004 HCAPLUS
DN 134:107762
TI Novel polymer for luminous component ingredient and luminous component
IN Araki, Katsumi
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001019947	A2	20010123	JP 1999-191854	19990706
US 6413658	B1	20020702	US 2000-611321	20000706
PRAI JP 1999-191854	A	19990706		

GI



AB The invention refers to a novel polymeric luminescent material which contains the following component I [R1,2 = H, (un)substituted alkyl, aryl, alkoxy, aryloxy alkylthio amino, heteroaryl, or aliph. heterocycle; and R1,2 may join together to form a ring].
IC ICM C09K011-06
ICS C08G061-12; C08L065-00; H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST polymer luminescent material
IT Luminescent substances
(novel polymer for luminous component ingredient and luminous component)
IT 16433-88-8, 2,7-Dibromofluorene 50926-11-9, ITO 67987-55-7,
Poly(2,5-pyridinediyl) 155090-83-8, Baytron P 320365-70-6
RL: DEV (Device component use); USES (Uses)
(novel polymer for luminous component ingredient and luminous component)
IT 320365-60-4P 320365-64-8P 320365-66-0P 320365-68-2P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (novel **polymer** for luminous component ingredient and luminous component)

IT 121-44-8, Triethylamine, reactions 366-18-7, 2,2'-Bipyridine 3457-48-5 78637-85-1D, 3,4-Diaminothiophene, hydrochloride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (novel **polymer** for luminous component ingredient and luminous component)

IT 38225-32-0P, Lithium isopropyl amide 320365-62-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (novel **polymer** for luminous component ingredient and luminous component)

IT 50926-11-9, ITO
 RL: DEV (Device component use); USES (Uses)
 (novel **polymer** for luminous component ingredient and luminous component)

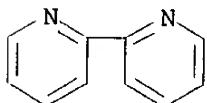
RN 50926-11-9 HCPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT 366-18-7, 2,2'-Bipyridine
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (novel **polymer** for luminous component ingredient and luminous component)

RN 366-18-7 HCPLUS
 CN 2,2'-Bipyridine (8CI, 9CI) (CA INDEX NAME)



L58 ANSWER 16 OF 36 HCPLUS COPYRIGHT 2002 ACS
 AN 2001:47463 HCPLUS
 DN 134:296179
 TI Synthesis, spectroscopy, and electrochemical properties of a novel p-n diblock poly(p-phenylenevinylene)-related **copolymer** containing bipyridine
 AU Wang, L.-H.; Kang, E.-T.; Huang, W.
 CS Department of Chemical and Environmental Engineering, National University of Singapore, Singapore, 119260, Singapore
 SO Polymer (2001), 42(8), 3949-3952
 CODEN: POLMAG; ISSN: 0032-3861
 PB Elsevier Science Ltd.
 DT Journal
 LA English
 AB A novel p-n diblock **copolymer** constituted of 2,2'-bipyridylene vinylene and 2-methoxy-5-(2'-ethylhexyloxy)-1,4-phenylene vinylene moieties was synthesized and characterized. The electrochem. properties

of the **copolymer** were evaluated and the HOMO and LUMO energy levels of the **polymer** were estd. by cyclic voltammetry. The **polymer** demonstrated intrinsically balanced tendencies for injecting and transporting electrons and holes, which are essential for fabrication of light-emitting diodes.

- CC 35-5 (Chemistry of Synthetic High **Polymers**)
Section cross-reference(s): 37, 72, 73
- IT Cyclic voltammetry
FMO (molecular orbital)
Luminescence
Redox potential
Thermal stability
(novel p-n poly(p-phenylenevinylene)-related **copolymer** contg.
bipyridine)
- IT Poly(arylenealkenylenes)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(novel p-n poly(p-phenylenevinylene)-related **copolymer** contg.
bipyridine)
- IT 7440-06-4, Platinum, uses 7440-22-4, Silver, uses
RL: DEV (Device component use); USES (Uses)
(electrode; novel p-n poly(p-phenylenevinylene)-related
copolymer contg. bipyridine)
- IT 307003-60-7P 307336-73-8P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(novel p-n poly(p-phenylenevinylene)-related **copolymer** contg.
bipyridine)
- IT 7440-06-4, Platinum, uses 7440-22-4, Silver, uses
RL: DEV (Device component use); USES (Uses)
(electrode; novel p-n poly(p-phenylenevinylene)-related
copolymer contg. bipyridine)
- RN 7440-06-4 HCAPLUS
CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

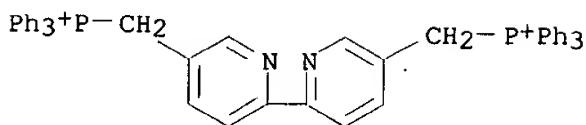
- RN 7440-22-4 HCAPLUS
CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

- IT 307003-60-7P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(novel p-n poly(p-phenylenevinylene)-related **copolymer** contg.
bipyridine)
- RN 307003-60-7 HCAPLUS
CN Phosphonium, [[2,2'-bipyridine]-5,5'-diylbis(methylene)]bis[triphenyl-,
dibromide, polymer with 2-[(2-ethylhexyl)oxy]-5-methoxy-1,4-
benzenedicarboxaldehyde (9CI) (CA INDEX NAME)

CM 1

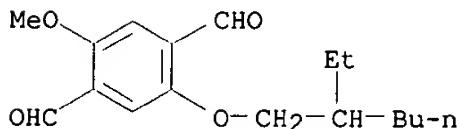
CRN 307003-59-4
CMF C48 H40 N2 P2 . 2 Br



●2 Br⁻

CM 2

CRN 203251-22-3
CMF C17 H24 O4



RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 17 OF 36 HCAPLUS COPYRIGHT 2002 ACS
AN 2000:835205 HCAPLUS
DN 134:19058
TI Rare earth-polymer complexes, their transparent thin films, manufacture of the complexes and the films, and optical materials using them for luminescence and wavelength conversion
IN Adachi, Ginya; Machida, Kenichi; Nishida, Yoshiyuki; Sato, Yasushi
PA Daicel Chemical Industries, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----
PI JP 2000327715	A2	20001128	JP 1999-137083	19990518
AB	The complexes comprise rare earth metals at the center and polymer ligands bonded with pendant of .pi.-conjugated bipyridyl, phenanthroline, or its derivs. Preferably, the complexes contain Tb or Eu and poly(4-vinyl-4'-methyl-2,2'-bipyridyl). The complexes are manufd. by dissolving polymer ligands and rare earth compds., preferably rare earth chlorides, in org. solvents, e.g., alcs., reacting, and then drying. Thin films contg. the complexes are also claimed. The films are manufd. by coating of solns. contg. the polymer ligands on substrates, impregnating solns. contg. rare earth ions to the coatings, and then drying. Optical materials, luminescent materials, and wavelength conversion materials contg. the complexes are also claimed. The thin films have good transparency and stability and are esp. suitable for conversion of UV light to visible light for solar cells.			
IC	ICM C08F008-42 ICS C08F026-06; C08J007-12; C09D139-08; C09D201-00; C09K011-06;			

C07F005-00; C09K003-00; C08L039-00
CC 49-7 (Industrial Inorganic Chemicals)
Section cross-reference(s): 38, 52, 73
ST rare earth bipyridyl vinyl polymer complex transparent film
manuf; phenanthroline rare earth polymer complex film optical
material; luminescence rare earth bipyridyl polymer complex
film; wavelength conversion rare earth bipyridyl polymer complex
solar cell
IT Luminescent substances
Solar cells
Transparent films
Wavelength
(manuf. of rare earth-polymer complex transparent thin films
for optical materials for luminescence and wavelength conversion)
IT Coordination compounds
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)
(manuf. of rare earth-polymer complex transparent thin films
for optical materials for luminescence and wavelength conversion)
IT Alcohols, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvents; manuf. of rare earth-polymer complex transparent
thin films for optical materials for luminescence and wavelength
conversion)
IT 7440-27-9DP, Terbium, polyvinyl bipyridyl complex, preparation
7440-53-1DP, Europium, polyvinyl bipyridyl complex, preparation
82441-96-1DP, terbium or europium complex
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or
engineered material use); PREP (Preparation); USES (Uses)
(manuf. of rare earth-polymer complex transparent thin films
for optical materials for luminescence and wavelength conversion)
IT 64-17-5, Ethanol, uses 67-56-1, Methanol, uses 67-63-0, Isopropyl
alcohol, uses 71-36-3, n-Butanol, uses 109-99-9, Tetrahydrofuran, uses
123-42-2, Diacetone alcohol
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; manuf. of rare earth-polymer complex transparent
thin films for optical materials for luminescence and wavelength
conversion)
IT 7440-27-9DP, Terbium, polyvinyl bipyridyl complex, preparation
7440-53-1DP, Europium, polyvinyl bipyridyl complex, preparation
82441-96-1DP, terbium or europium complex
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or
engineered material use); PREP (Preparation); USES (Uses)
(manuf. of rare earth-polymer complex transparent thin films
for optical materials for luminescence and wavelength conversion)
RN 7440-27-9 HCAPLUS
CN Terbium (8CI, 9CI) (CA INDEX NAME)

Tb

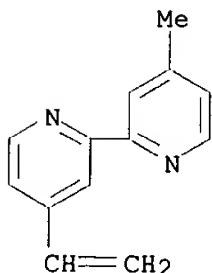
RN 7440-53-1 HCAPLUS
CN Europium (8CI, 9CI) (CA INDEX NAME)

Eu

RN 82441-96-1 HCAPLUS
CN 2,2'-Bipyridine, 4-ethenyl-4'-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74173-48-1
CMF C13 H12 N2



L58 ANSWER 18 OF 36 HCPLUS COPYRIGHT 2002 ACS
AN 2000:219357 HCPLUS
DN 133:18194
TI Synthesis and Properties of Polyamides and Polyesters On the basis of 2,2'-Bipyridine-5,5'-Dicarboxylic Acid and the Corresponding Polymer-Ruthenium Complexes
AU Yu, Sze Chit; Hou, Sijian; Chan, Wai Kin
CS Department of Chemistry, University of Hong Kong, Hong Kong, Hong Kong
SO Macromolecules (2000), 33(9), 3259-3273
CODEN: MAMOBX; ISSN: 0024-9297
PB American Chemical Society
DT Journal
LA English
AB Two series of polyamides and polyesters derived from 2,2'-bipyridine-5,5'-dicarboxylic acid were synthesized. Different types of aliph. and arom. diamine and diol monomers with different structure were polymd. with the diacid or diacid chloride by using different polymn. methods. Most of these polymers exhibited modest thermal stabilities with decompn. temps. in the range 320-500.degree., depending on the structure of the polymer main chain. Some polyamides with a rigid main chain formed a lyotropic mesophase when dissolved in concd. H₂SO₄ or HMPA-4% LiCl solvent systems. For those polyamides and polyesters with a more flexible main chain, a thermotropic liq. crystal phase was obsd. If a long and flexible pendant chain was attached to the polyesters, side chain melting was obsd. before the onset of the cryst.-nematic transition. The 2,2'-bipyridyl moieties were able to form a complex with Ru. These polymer-Ru complexes were either synthesized by metalation of the polymers or synthesized directly from the corresponding Ru-contg. monomer. After the formation of Ru complexes, they were able to enhance the photosensitivity and charge carrier mobility of the polymers. The Ru-contg. polymers also emit red light at .apprx.700 nm owing to the emission from the metal-ligand charge-transfer excited states. Some polymers with good film forming properties were fabricated into simple single-layer light-emitting devices, and red light emission was obsd. when the devices were subjected to forward bias.
CC 37-5 (Plastics Manufacture and Processing)
Section cross-reference(s): 36, 75
ST polyamide bipyridine dicarboxylic prepn property; polyester bipyridine

- dicarboxylic prepn property; ruthenium **polymer** complex prepn
property; liq cryst bipyridine dicarboxylic **polymer**
- IT Polyamides, preparation
Polyesters, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(arom., fluorine-contg.; synthesis and properties of polyamides and
polyesters based on 2,2'-bipyridine-5,5'-dicarboxylic acid and
corresponding **polymer**-ruthenium complexes)
- IT Polyamides, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(arom.; synthesis and properties of polyamides and polyesters based on
2,2'-bipyridine-5,5'-dicarboxylic acid and corresponding
polymer-ruthenium complexes)
- IT Polyamides, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(fluorine-contg., arom.; synthesis and properties of polyamides and
polyesters based on 2,2'-bipyridine-5,5'-dicarboxylic acid and
corresponding **polymer**-ruthenium complexes)
- IT Polyesters, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(liq.-cryst., lyotropic and thermotropic; synthesis and properties of
polyamides and polyesters based on 2,2'-bipyridine-5,5'-dicarboxylic
acid and corresponding **polymer**-ruthenium complexes)
- IT Polyesters, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(perfluoro, arom.; synthesis and properties of polyamides and
polyesters based on 2,2'-bipyridine-5,5'-dicarboxylic acid and
corresponding **polymer**-ruthenium complexes)
- IT **Fluoropolymers**, preparation
Polyethers, preparation
Polyethers, preparation
Polysulfones, preparation
Polysulfones, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyamide-, arom.; synthesis and properties of polyamides and
polyesters based on 2,2'-bipyridine-5,5'-dicarboxylic acid and
corresponding **polymer**-ruthenium complexes)
- IT **Fluoropolymers**, preparation
Polyethers, preparation
Polyethers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyester-, arom.; synthesis and properties of polyamides and
polyesters based on 2,2'-bipyridine-5,5'-dicarboxylic acid and
corresponding **polymer**-ruthenium complexes)
- IT Liquid crystals, **polymeric**
(polyesters, lyotropic and thermotropic; synthesis and properties of
polyamides and polyesters based on 2,2'-bipyridine-5,5'-dicarboxylic
acid and corresponding **polymer**-ruthenium complexes)
- IT Polyamides, preparation
Polyamides, preparation
Polyesters, preparation
Polyesters, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyether-, arom.; synthesis and properties of polyamides and
polyesters based on 2,2'-bipyridine-5,5'-dicarboxylic acid and
corresponding **polymer**-ruthenium complexes)
- IT Polyamides, preparation
Polyamides, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polysulfone-, arom.; synthesis and properties of polyamides and

polyesters based on 2,2'-bipyridine-5,5'-dicarboxylic acid and corresponding polymer-ruthenium complexes)

IT Electron transport
Luminescence
Photoconductivity
(synthesis and properties of polyamides and polyesters based on 2,2'-bipyridine-5,5'-dicarboxylic acid and corresponding polymer-ruthenium complexes)

IT 68846-36-6P 258334-13-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in complex formation; synthesis and properties of polyamides and polyesters based on 2,2'-bipyridine-5,5'-dicarboxylic acid and corresponding polymer-ruthenium complexes)

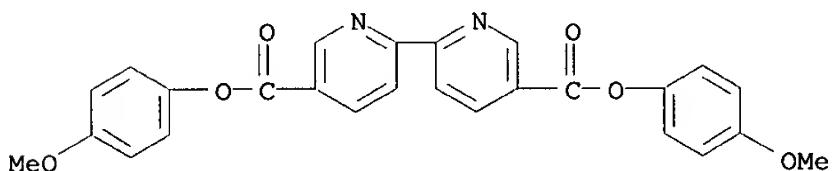
IT 150-76-5, 4-Methoxyphenol
RL: RCT (Reactant); RACT (Reactant or reagent)
(in model compd. prepn.; synthesis and properties of polyamides and polyesters based on 2,2'-bipyridine-5,5'-dicarboxylic acid and corresponding polymer-ruthenium complexes)

IT 1472-85-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; synthesis and properties of polyamides and polyesters based on 2,2'-bipyridine-5,5'-dicarboxylic acid and corresponding polymer-ruthenium complexes)

IT 163191-75-1P 271781-88-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(model compd.; synthesis and properties of polyamides and polyesters based on 2,2'-bipyridine-5,5'-dicarboxylic acid and corresponding polymer-ruthenium complexes)

IT 87868-03-9P 127568-70-1P 127584-17-2P
188304-11-2P 188304-12-3P 188304-13-4P
188304-14-5P 188304-15-6P 188304-16-7P
188304-18-9P 188304-19-0P 188304-21-4P
188304-22-5P 188304-23-6P 188304-24-7P
188304-25-8P 188304-26-9P 271583-41-6P
271583-43-8P 271583-45-0P 271583-47-2P
271583-49-4P 271583-51-8P 271583-53-0P
271583-54-1P 271583-55-2P 271583-56-3P
271583-60-9P 271583-62-1P 271583-63-2P
271583-65-4P 271583-66-5P 271583-68-7P
271583-69-8P 271583-71-2P 271583-74-5P
271583-76-7P 271583-77-8P 271583-78-9P
271583-79-0P 271583-80-3P 271583-81-4P
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271584-22-6P 271584-23-7P 271584-24-8P
271584-25-9P 271584-26-0P 271584-27-1P
271584-28-2P 271584-29-3P 271584-30-6P

- 271584-31-7P 271584-32-8P 271584-33-9P
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 271584-37-3P 271584-38-4P 271584-39-5P
 271781-83-0P 271781-84-1P 271781-85-2P
 271781-86-3P 272120-54-4P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (synthesis and properties of polyamides and polyesters based on
 2,2'-bipyridine-5,5'-dicarboxylic acid and corresponding
 polymer-ruthenium complexes)
- IT 64-17-5, Ethanol, reactions 92-88-6, [1,1'-Biphenyl]-4,4'-diol
 103-90-2, 4-Acetamidophenol 105-53-3, Diethyl malonate 106-49-0,
 p-Toluidine, reactions 111-83-1, 1-Bromoocetane 112-30-1, 1-Decanol
 123-31-9, 1,4-Benzene diol, reactions 615-94-1, 2,5-Dihydroxy-1,4-
 benzoquinone 629-03-8 1802-30-8, 2,2'-Bipyridine-5,5'-
 dicarboxylic acid 2009-83-8, 6-Chloro-1-hexanol 3344-70-5,
 1,12-Dibromododecane 7719-09-7, Thionyl chloride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (synthesis and properties of polyamides and polyesters based on
 2,2'-bipyridine-5,5'-dicarboxylic acid and corresponding
 polymer-ruthenium complexes)
- IT 1762-46-5P, Diethyl-2,2'-bipyridine-5,5'-dicarboxylate
 70856-53-0P, 1,10-Bis(4-hydroxyphenoxy)decane 70856-68-7P 70856-78-9P
 74971-70-3P 82799-91-5P 97087-90-6P, 4,4'-Bis(6-
 hydroxyhexoxy)biphenyl 104209-29-2P 115563-53-6P 118476-28-1P
 118476-29-2P 132955-76-1P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (synthesis and properties of polyamides and polyesters based on
 2,2'-bipyridine-5,5'-dicarboxylic acid and corresponding
 polymer-ruthenium complexes)
- IT 7440-18-8DP, Ruthenium, complexes with 2,2'-bipyridyl chain
 fragment -contg. polyesters, preparation 271584-11-3DP,
 ruthenium complexes 271584-12-4DP, ruthenium complexes
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (synthesis and properties of polyamides and polyesters based on
 2,2'-bipyridine-5,5'-dicarboxylic acid and corresponding
 polymer-ruthenium complexes)
- IT 163191-75-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (model compd.; synthesis and properties of polyamides and polyesters
 based on 2,2'-bipyridine-5,5'-dicarboxylic acid and corresponding
 polymer-ruthenium complexes)
- RN 163191-75-1 HCPLUS
- CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, bis(4-methoxyphenyl) ester (9CI)
 (CA INDEX NAME)



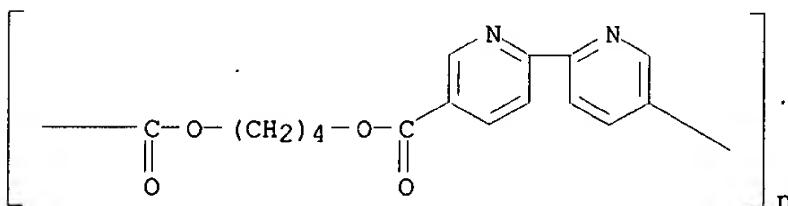
- IT 87868-03-9P 127568-70-1P 127584-17-2P
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 188304-14-5P 188304-15-6P 188304-16-7P
 188304-18-9P 188304-19-0P 188304-21-4P
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 271584-28-2P 271584-29-3P 271584-30-6P
 271584-31-7P 271584-32-8P 271584-33-9P
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 271584-37-3P 271584-38-4P 271584-39-5P
 271781-83-0P 271781-84-1P 271781-85-2P
271781-86-3P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (synthesis and properties of polyamides and polyesters based on
 2,2'-bipyridine-5,5'-dicarboxylic acid and corresponding
 polymer-ruthenium complexes)

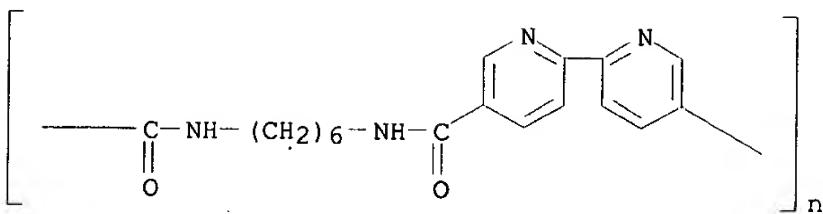
RN 87868-03-9 HCPLUS

CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,4-butanediylloxycarbonyl)
 (9CI) (CA INDEX NAME)



RN 127568-70-1 HCPLUS

CN Poly([2,2'-bipyridine]-5,5'-diylcarbonylimino-1,6-hexanediyliminocarbonyl)
 (9CI) (CA INDEX NAME)



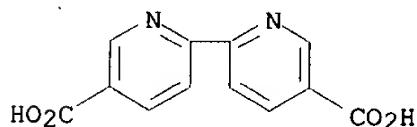
RN 127584-17-2 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with 1,6-hexanediamine
(9CI) (CA INDEX NAME)

CM 1

CRN 1802-30-8

CMF C12 H8 N2 O4



CM 2

CRN 124-09-4

CMF C6 H16 N2

H₂N-(CH₂)₆-NH₂

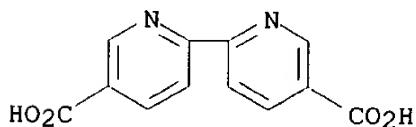
RN 188304-11-2 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with 1,4-benzenediamine
(9CI) (CA INDEX NAME)

CM 1

CRN 1802-30-8

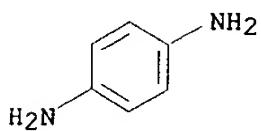
CMF C12 H8 N2 O4



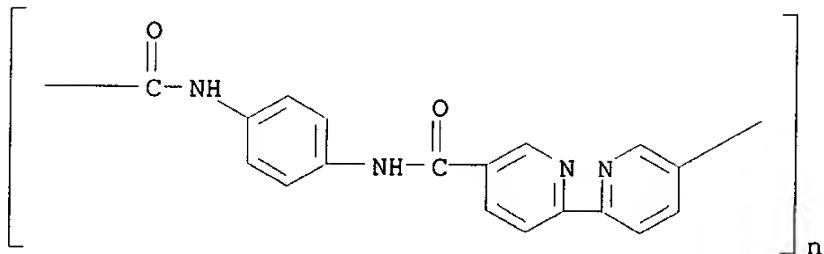
CM 2

CRN 106-50-3

CMF C6 H8 N2



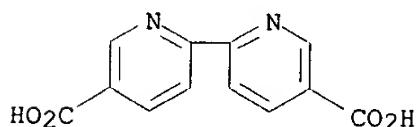
RN 188304-12-3 HCPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonylimino-1,4-phenyleneiminocarbonyl)
(9CI) (CA INDEX NAME)



RN 188304-13-4 HCPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with
[1,1'-biphenyl]-4,4'-diamine (9CI) (CA INDEX NAME)

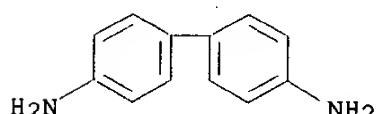
CM 1

CRN 1802-30-8
CMF C12 H8 N2 O4

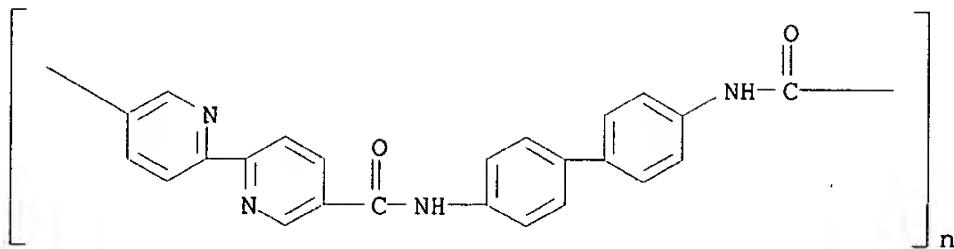


CM 2

CRN 92-87-5
CMF C12 H12 N2



RN 188304-14-5 HCPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonylimino[1,1'-biphenyl]-4,4'-diyliminocarbonyl) (9CI) (CA INDEX NAME)



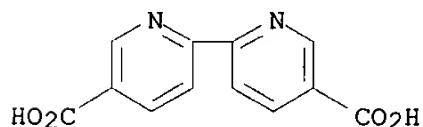
RN 188304-15-6 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with
4,4'-oxybis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 1802-30-8

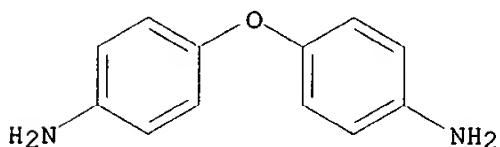
CMF C12 H8 N2 O4



CM 2

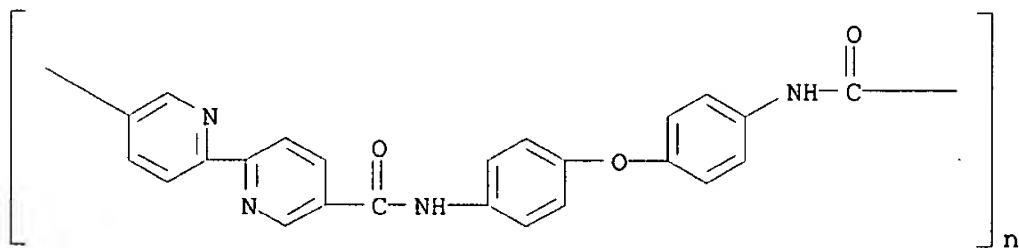
CRN 101-80-4

CMF C12 H12 N2 O



RN 188304-16-7 HCPLUS

CN Poly([2,2'-bipyridine]-5,5'-diylcarbonylimino-1,4-phenyleneoxy-1,4-phenyleneiminocarbonyl) (9CI) (CA INDEX NAME)



RN 188304-18-9 HCPLUS

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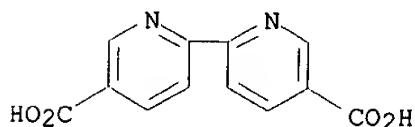
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CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with
3,3'-dimethoxy[1,1'-biphenyl]-4,4'-diamine (9CI) (CA INDEX NAME)

CM 1

CRN 1802-30-8

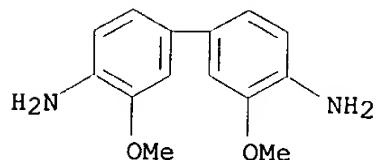
CMF C12 H8 N2 O4



CM 2

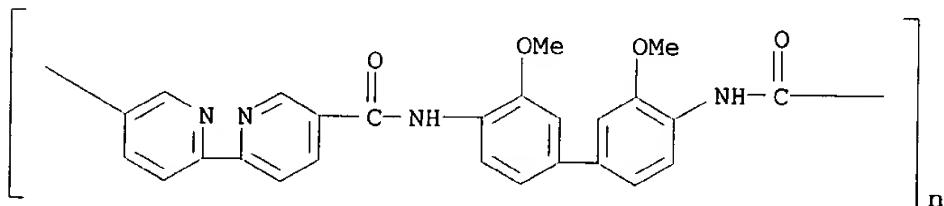
CRN 119-90-4

CMF C14 H16 N2 O2



RN 188304-19-0 HCAPLUS

CN Poly[[2,2'-bipyridine]-5,5'-diylcarbonylimino(3,3'-dimethoxy[1,1'-biphenyl]-4,4'-diyl)iminocarbonyl] (9CI) (CA INDEX NAME)



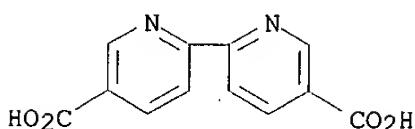
RN 188304-21-4 HCAPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with
4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[benzenamine] (9CI)
(CA INDEX NAME)

CM 1

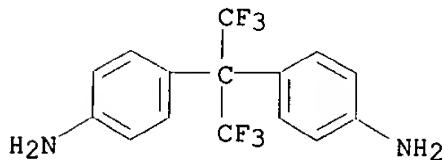
CRN 1802-30-8

CMF C12 H8 N2 O4

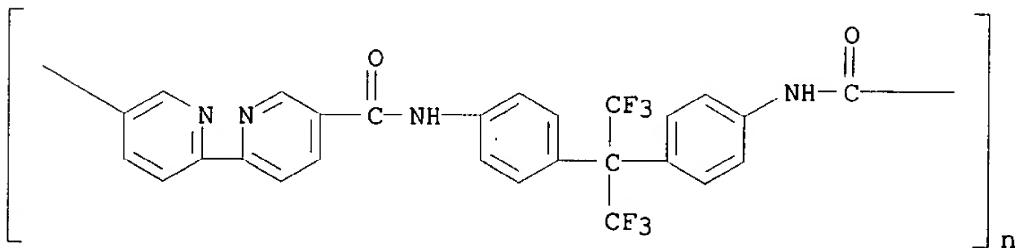


CM 2

CRN 1095-78-9
CMF C15 H12 F6 N2



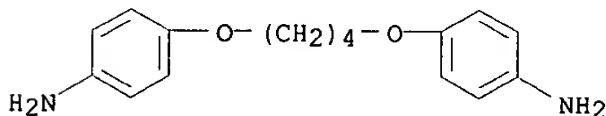
RN 188304-22-5 HCPLUS
CN Poly[[2,2'-bipyridine]-5,5'-diylcarbonylimino-1,4-phenylene{2,2,2-trifluoro-1-(trifluoromethyl)ethylidene}-1,4-phenyleneiminocarbonyl] (9CI)
(CA INDEX NAME)



RN 188304-23-6 HCPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with
4,4'-[1,4-butanediylbis(oxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

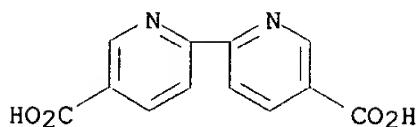
CM 1

CRN 6245-50-7
CMF C16 H20 N2 O2



CM 2

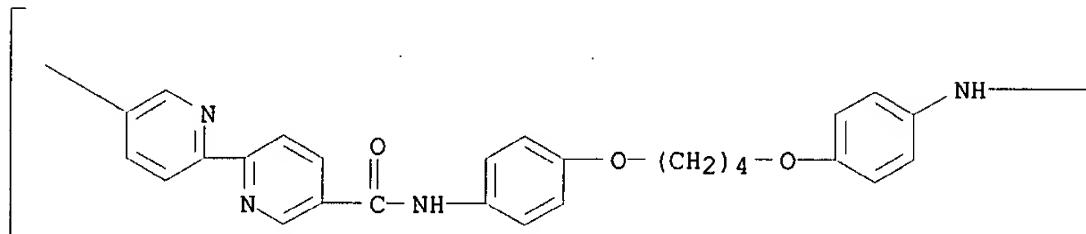
CRN 1802-30-8
CMF C12 H8 N2 O4



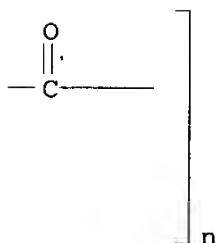
RN 188304-24-7 HCPLUS

CN Poly([2,2'-bipyridine]-5,5'-diylcarbonylimino-1,4-phenyleneoxy-1,4-butanediyoxy-1,4-phenyleneiminocarbonyl) (9CI) (CA INDEX NAME)

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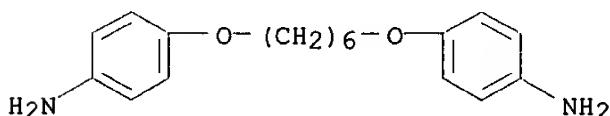
RN 188304-25-8 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with
4,4'-(1,6-hexanediyloxy)bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 47244-09-7

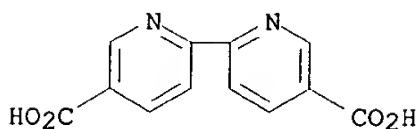
CMF C18 H24 N2 O2



CM 2

CRN 1802-30-8

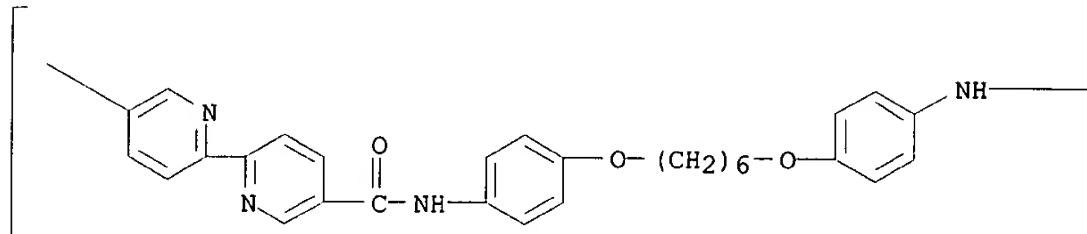
CMF C12 H8 N2 O4



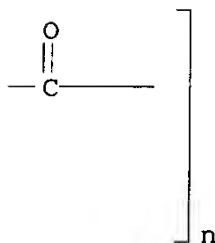
RN 188304-26-9 HCPLUS

CN Poly([2,2'-bipyridine]-5,5'-diylcarbonylimino-1,4-phenyleneoxy-1,6-hexanediyoxy-1,4-phenyleneiminocarbonyl) (9CI) (CA INDEX NAME)

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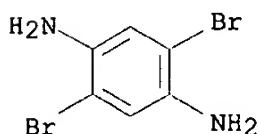
RN 271583-41-6 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with
2,5-dibromo-1,4-benzenediamine (9CI) (CA INDEX NAME)

CM 1

CRN 25462-61-7

CMF C6 H6 Br2 N2

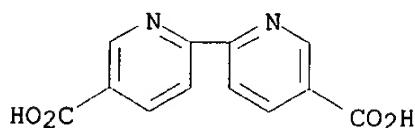


CM 2

CRN 1802-30-8

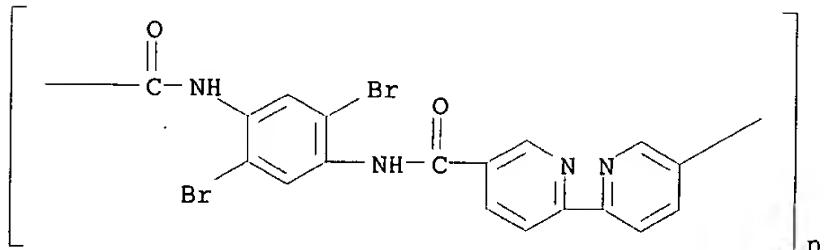
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CMF C12 H8 N2 O4



RN 271583-43-8 HCPLUS

CN Poly[[2,2'-bipyridine]-5,5'-diylcarbonylimino(2,5-dibromo-1,4-phenylene)iminocarbonyl] (9CI) (CA INDEX NAME)



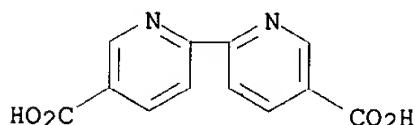
RN 271583-45-0 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with
2,2'-(1,2-ethenediyl)bis[5-aminobenzenesulfonic acid] (9CI) (CA INDEX
NAME)

CM 1

CRN 1802-30-8

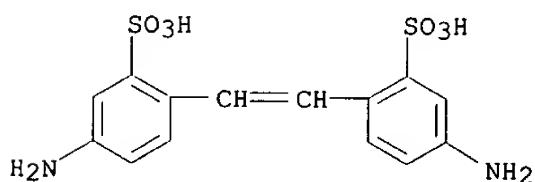
CMF C12 H8 N2 O4



CM 2

CRN 81-11-8

CMF C14 H14 N2 O6 S2



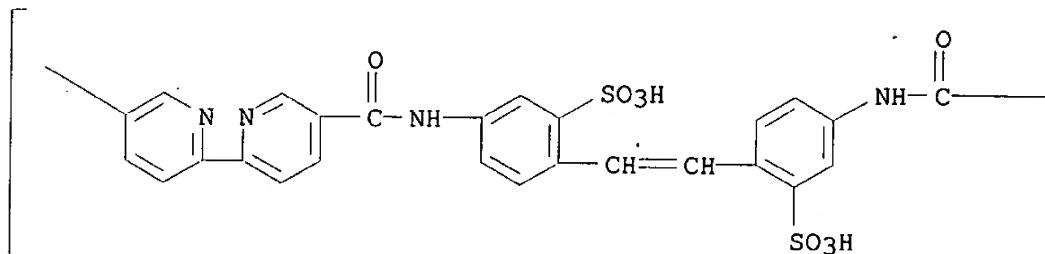
RN 271583-47-2 HCPLUS

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CN Poly[[2,2'-bipyridine]-5,5'-diylcarbonylimino(3-sulfo-1,4-phenylene)-1,2-ethenediyl(2-sulfo-1,4-phenylene)iminocarbonyl] (9CI) (CA INDEX NAME)

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]

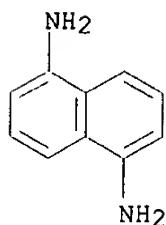
n

RN 271583-49-4 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with
1,5-naphthalenediamine (9CI) (CA INDEX NAME)

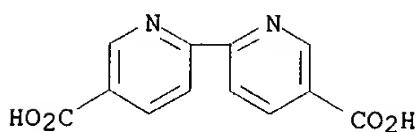
CM 1

CRN 2243-62-1
CMF C10 H10 N2



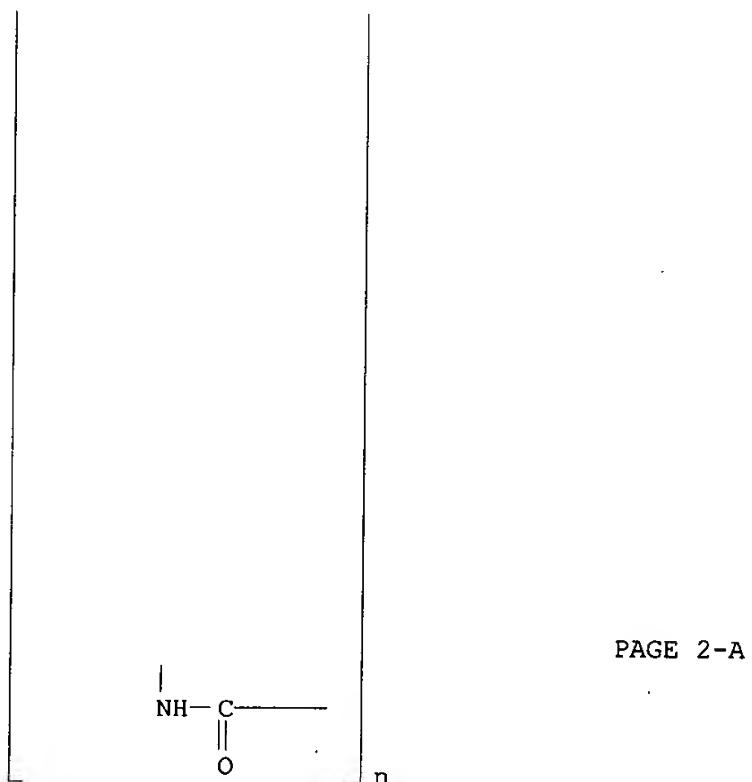
CM 2

CRN 1802-30-8
CMF C12 H8 N2 O4



RN 271583-51-8 HCAPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonylimino-1,5-naphthalenediyliminocarbonyl) (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT.*

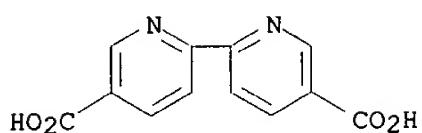


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RN 271583-53-0 HCAPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with 4,4'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

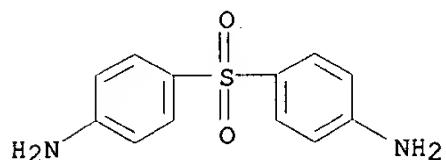
CM 1

CRN 1802-30-8
CMF C12 H8 N2 O4

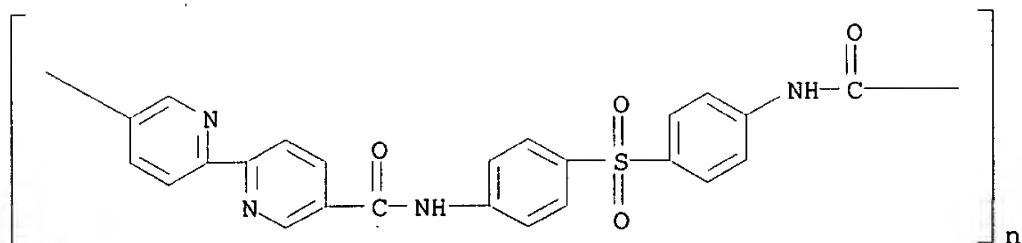


CM 2

CRN 80-08-0
CMF C12 H12 N2 O2 S



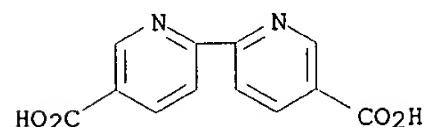
RN 271583-54-1 HCPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonylimino-1,4-phenylenesulfonyl-1,4-phenyleneimino carbonyl) (9CI) (CA INDEX NAME)



RN 271583-55-2 HCPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with 4,4'-methylenebis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

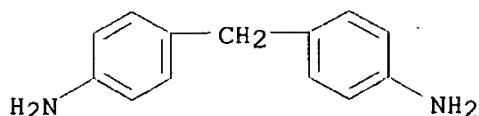
CRN 1802-30-8
CMF C12 H8 N2 O4



CM 2

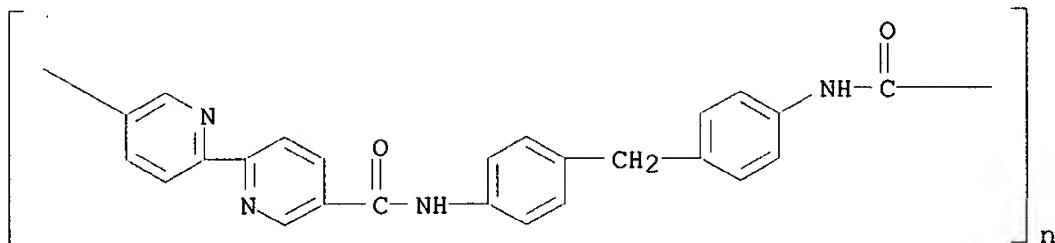
CRN 101-77-9

CMF C13 H14 N2



RN 271583-56-3 HCPLUS

CN Poly([2,2'-bipyridine]-5,5'-diylcarbonylimino-1,4-phenylenemethylene-1,4-phenyleneiminocarbonyl) (9CI) (CA INDEX NAME)



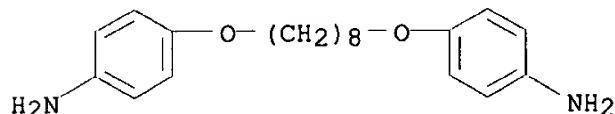
RN 271583-60-9 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with
4,4'-(1,8-octanediylobis(oxy))bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 90076-88-3

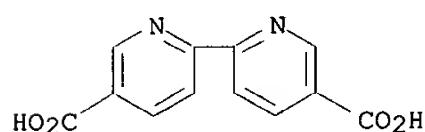
CMF C20 H28 N2 O2



CM 2

CRN 1802-30-8

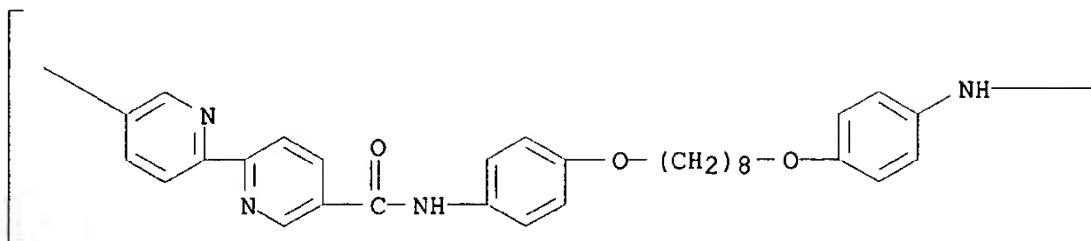
CMF C12 H8 N2 O4



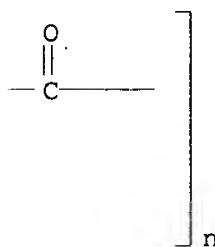
RN 271583-62-1 HCPLUS

CN Poly([2,2'-bipyridine]-5,5'-diylcarbonylimino-1,4-phenyleneoxy-1,8-octanediyloxy-1,4-phenyleneiminocarbonyl) (9CI) (CA INDEX NAME)

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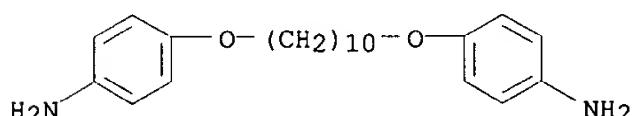
RN 271583-63-2 HCAPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with
4,4'-(1,10-decanediylbis(oxy))bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 38324-63-9

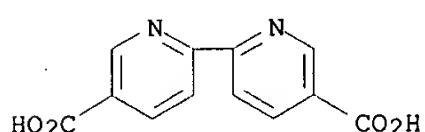
CMF C22 H32 N2 O2



CM 2

CRN 1802-30-8

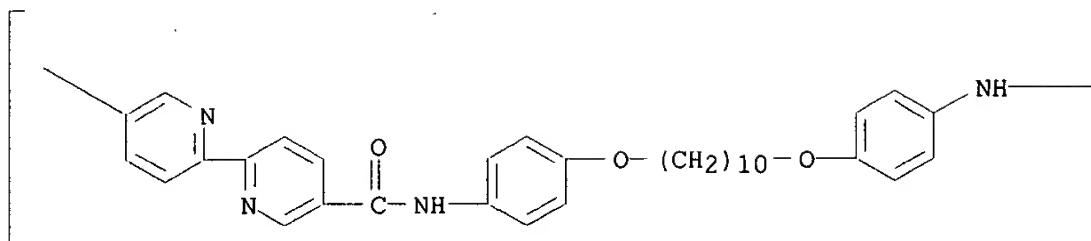
CMF C12 H8 N2 O4



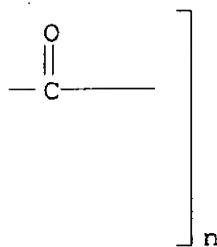
RN 271583-65-4 HCAPLUS

CN Poly([2,2'-bipyridine]-5,5'-diylcarbonylimino-1,4-phenyleneoxy-1,10-decanediyoxy-1,4-phenyleneiminocarbonyl) (9CI) (CA INDEX NAME)

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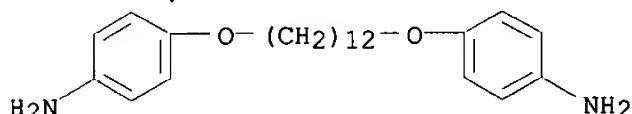
RN 271583-66-5 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with
4,4'-[1,12-dodecanediylbis(oxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 71332-44-0

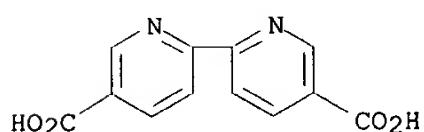
CMF C24 H36 N2 O2



CM 2

CRN 1802-30-8

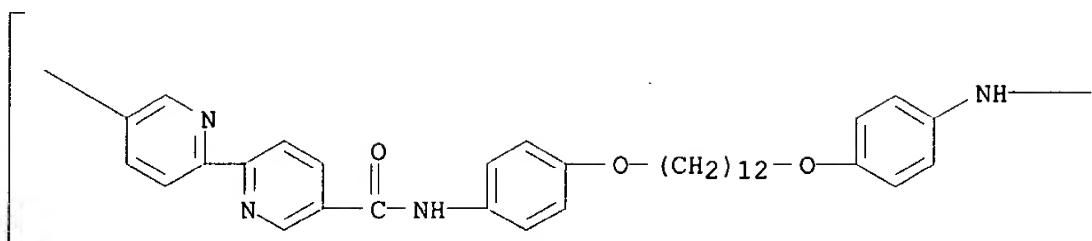
CMF C12 H8 N2 O4



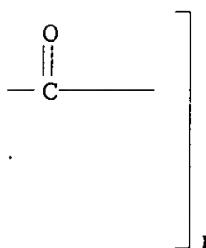
RN 271583-68-7 HCPLUS

CN Poly([2,2'-bipyridine]-5,5'-diylcarbonylimino-1,4-phenyleneoxy-1,12-dodecanediyloxy-1,4-phenyleneiminocarbonyl) (9CI) (CA INDEX NAME)

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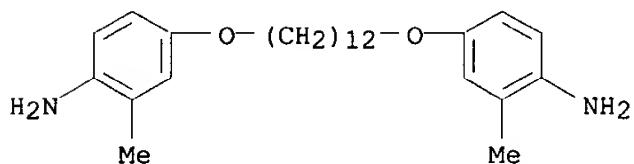
RN 271583-69-8 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with
4,4'-[1,12-dodecanediylbis(oxy)]bis[2-methylbenzenamine] (9CI) (CA INDEX
NAME)

CM 1

CRN 61594-66-9

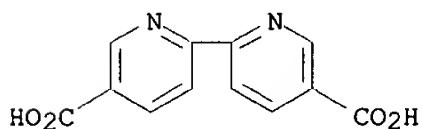
CMF C26 H40 N2 O2



CM 2

CRN 1802-30-8

CMF C12 H8 N2 O4

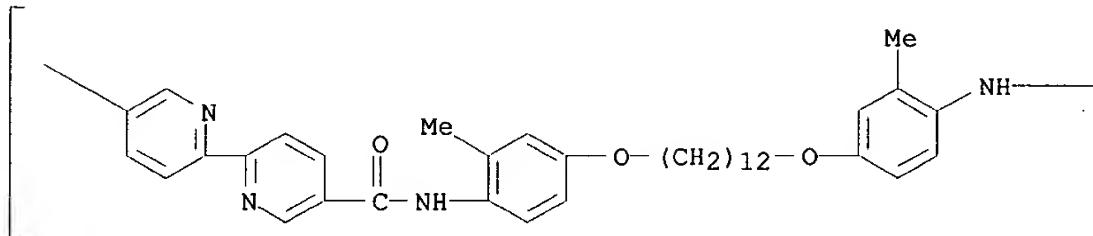


RN 271583-71-2 HCPLUS

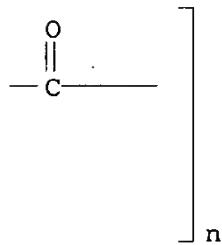
CN Poly[[2,2'-bipyridine]-5,5'-diylcarbonylimino(2-methyl-1,4-phenylene)oxygen-

1,12-dodecanediyl[3-methyl-1,4-phenylene iminocarbonyl] (9CI) (CA INDEX NAME)

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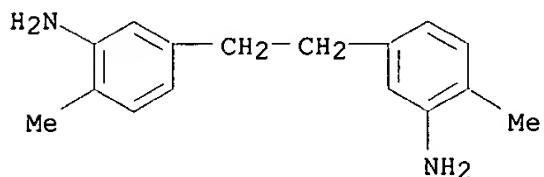
RN 271583-74-5 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with
3,3'-(1,2-ethanediyl)bis[6-methylbenzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 271583-73-4

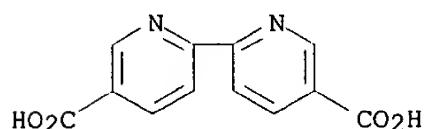
CMF C16 H20 N2



CM 2

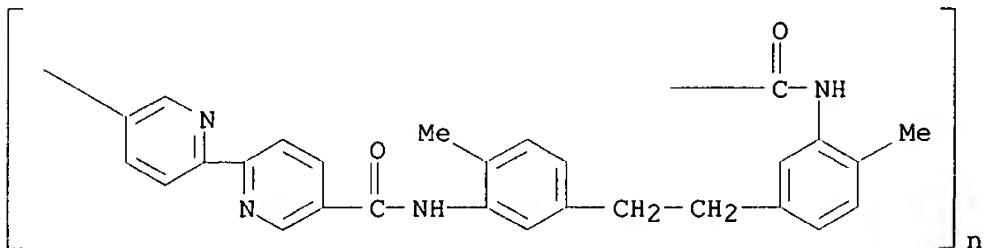
CRN 1802-30-8

CMF C12 H8 N2 O4



RN 271583-76-7 HCPLUS

CN Poly[[2,2'-bipyridine]-5,5'-diylcarbonylimino(6-methyl-1,3-phenylene)-1,2-ethanediyl(4-methyl-1,3-phenylene)iminocarbonyl] (9CI) (CA INDEX NAME)



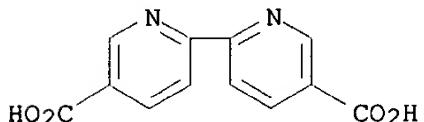
RN 271583-77-8 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with 1,3-propanediamine (9CI) (CA INDEX NAME)

CM 1

CRN 1802-30-8

CMF C12 H8 N2 O4



CM 2

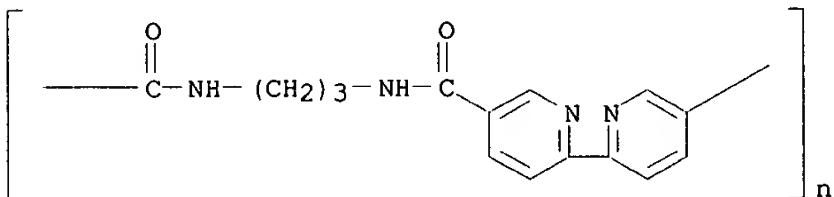
CRN 109-76-2

CMF C3 H10 N2

H₂N-CH₂-CH₂-CH₂-NH₂

RN 271583-78-9 HCPLUS

CN Poly([2,2'-bipyridine]-5,5'-diylcarbonylimino-1,3-propanediyliminocarbonyl) (9CI) (CA INDEX NAME)



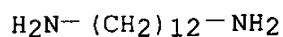
RN 271583-79-0 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, polymer with

1,12-dodecanediamine (9CI) (CA INDEX NAME)

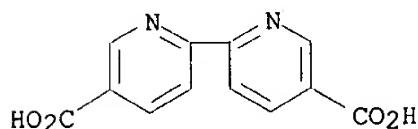
CM 1

CRN 2783-17-7
CMF C12 H28 N2



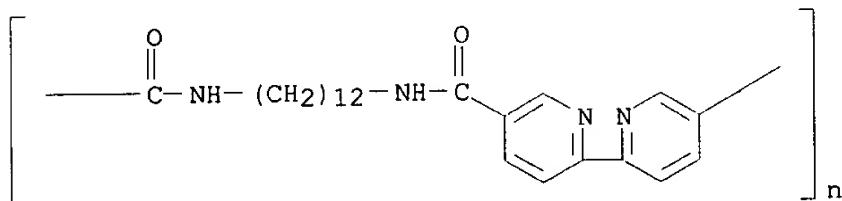
CM 2

CRN 1802-30-8
CMF C12 H8 N2 O4



RN 271583-80-3 HCPLUS

CN Poly([2,2'-bipyridine]-5,5'-diylcarbonylimino-1,12-dodecanediyliminocarbonyl) (9CI) (CA INDEX NAME)

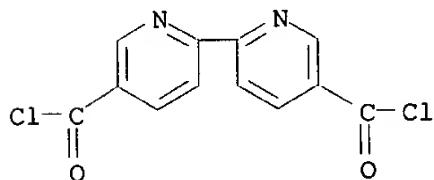


RN 271583-81-4 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarbonyl dichloride, polymer with [1,1'-biphenyl]-4,4'-diol (9CI) (CA INDEX NAME)

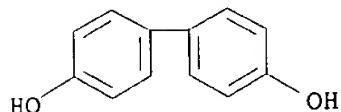
CM 1

CRN 82799-91-5
CMF C12 H6 Cl2 N2 O2

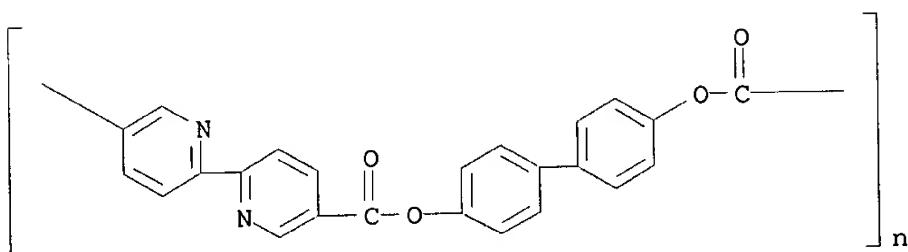


CM 2

CRN 92-88-6
CMF C12 H10 O2



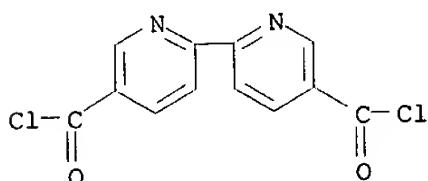
RN 271583-82-5 HCPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy[1,1'-biphenyl]-4,4'-diyloxy carbonyl) (9CI) (CA INDEX NAME)



RN 271583-83-6 HCPLUS
CN [2,2'-Bipyridine]-5,5'-dicarbonyl dichloride, polymer with 4,4'-(1-methylethyldene)bis[phenol] (9CI) (CA INDEX NAME)

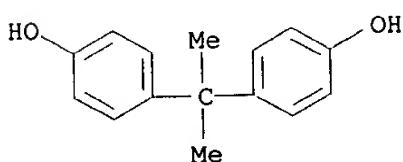
CM 1

CRN 82799-91-5
CMF C12 H6 Cl2 N2 O2



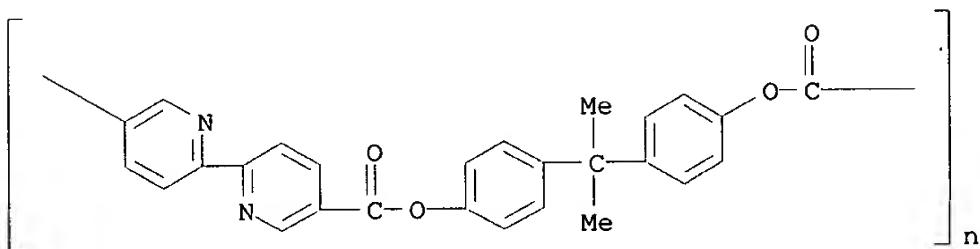
CM 2

CRN 80-05-7
CMF C15 H16 O2



RN 271583-84-7 HCPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,4-phenylene(1-

methylmethylenecarbonyl)-1,4-phenyleneoxy carbonyl] (9CI) (CA INDEX NAME)



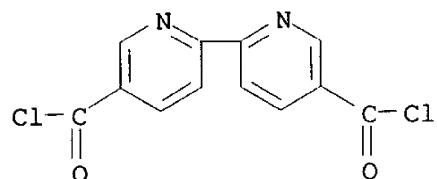
RN 271583-85-8 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarbonyl dichloride, polymer with
4,4'-(2,2,2-trifluoro-1-(trifluoromethyl)ethylidene)bis[phenol] (9CI) (CA
INDEX NAME)

CM 1

CRN 82799-91-5

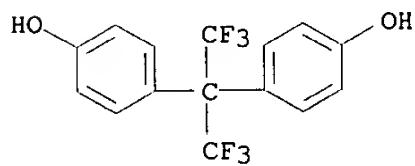
CMF C12 H6 Cl2 N2 O2



CM 2

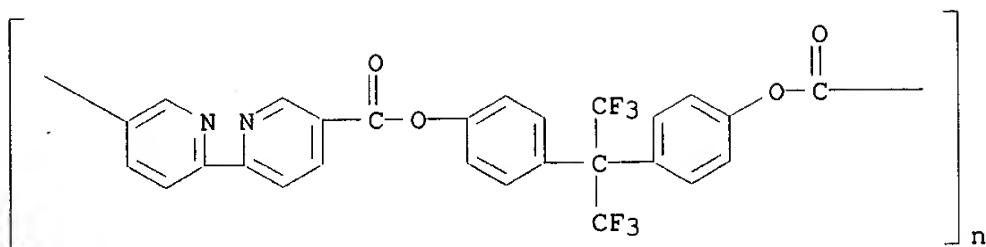
CRN 1478-61-1

CMF C15 H10 F6 O2



RN 271583-86-9 HCPLUS

CN Poly[2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,4-phenylene[2,2,2-trifluoro-
1-(trifluoromethyl)ethylidene]-1,4-phenyleneoxycarbonyl] (9CI) (CA INDEX
NAME)



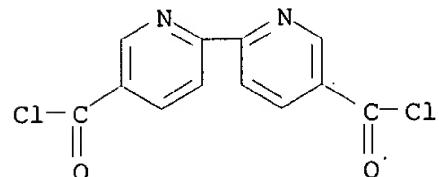
RN 271583-87-0 HCAPLUS

CN [2,2'-Bipyridine]-5,5'-dicarbonyl dichloride, polymer with
4,4'-(1-methylethylidene)bis[2,6-dibromophenol] (9CI) (CA INDEX NAME)

CM 1

CRN 82799-91-5

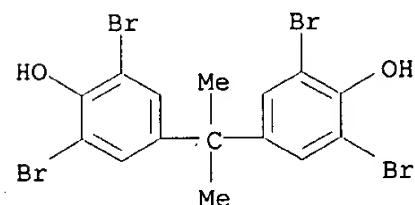
CMF C12 H6 Cl12 N2 O2



CM 2

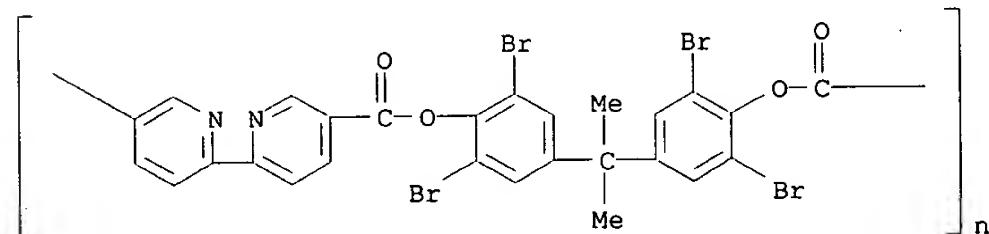
CRN 79-94-7

CMF C15 H12 Br4 O2



RN 271583-88-1 HCAPLUS

CN Poly[[2,2'-bipyridine]-5,5'-dicarbonyloxy(2,6-dibromo-1,4-phenylene)(1-methylethylidene)(3,5-dibromo-1,4-phenylene)oxygen] (9CI) (CA INDEX NAME)



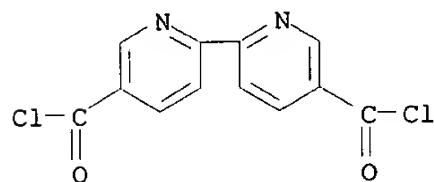
RN 271583-89-2 HCAPLUS

CN [2,2'-Bipyridine]-5,5'-dicarbonyl dichloride, polymer with
bis(4-hydroxyphenyl)methanone (9CI) (CA INDEX NAME)

CM 1

CRN 82799-91-5

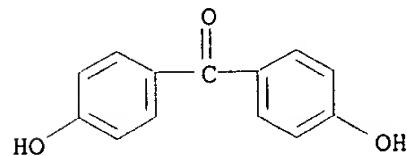
CMF C12 H6 Cl2 N2 O2



CM 2

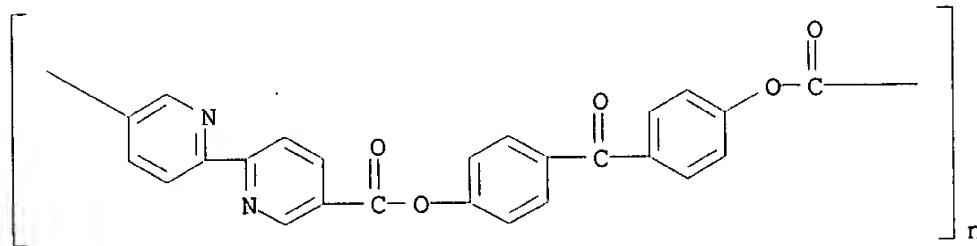
CRN 611-99-4

CMF C13 H10 O3



RN 271583-90-5 HCAPLUS

CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,4-phenylene carbonyl-1,4-phenyleneoxycarbonyl) (9CI) (CA INDEX NAME)



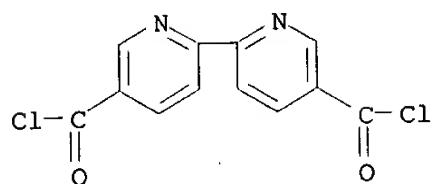
RN 271583-91-6 HCAPLUS

CN [2,2'-Bipyridine]-5,5'-dicarbonyl dichloride, polymer with
1-(2,5-dihydroxyphenyl)-1-propanone (9CI) (CA INDEX NAME)

CM 1

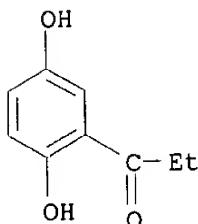
CRN 82799-91-5

CMF C12 H6 Cl2 N2 O2



CM 2

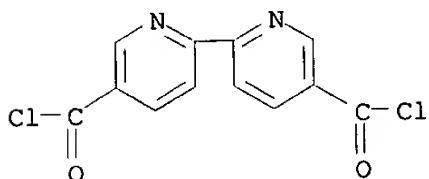
CRN 938-46-5
CMF C9 H10 O3



RN 271583-92-7 HCPLUS
CN [2,2'-Bipyridine]-5,5'-dicarbonyl dichloride, polymer with
2,7-naphthalenediol (9CI) (CA INDEX NAME)

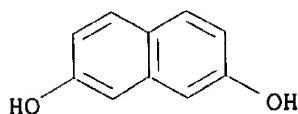
CM 1

CRN 82799-91-5
CMF C12 H6 Cl2 N2 O2

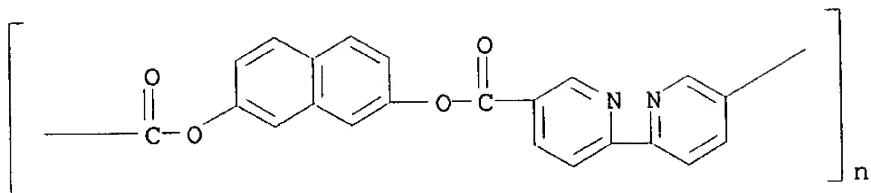


CM 2

CRN 582-17-2
CMF C10 H8 O2



RN 271583-93-8 HCPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-2,7-naphthalenediyloxy carbonyl) (9CI) (CA INDEX NAME)



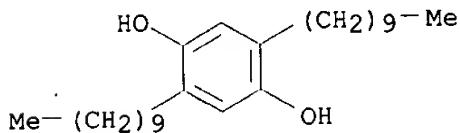
RN 271583-94-9 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarbonyl dichloride, polymer with
2,5-didecyl-1,4-benzenediol (9CI) (CA INDEX NAME)

CM 1

CRN 96069-90-8

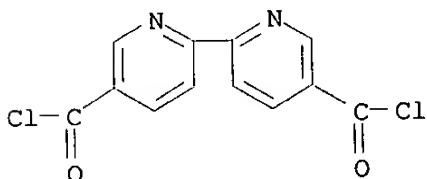
CMF C26 H46 O2



CM 2

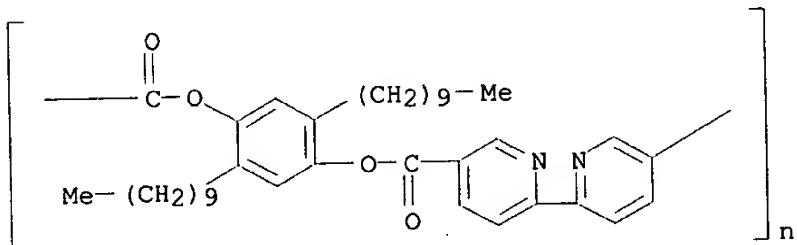
CRN 82799-91-5

CMF C12 H6 Cl2 N2 O2



RN 271583-95-0 HCPLUS

CN Poly[[2,2'-bipyridine]-5,5'-diylcarbonyloxy(2,5-didecyl-1,4-
phenylene)oxygenyl] (9CI) (CA INDEX NAME)



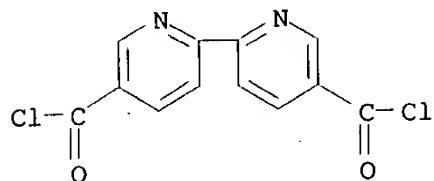
RN 271583-96-1 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarbonyl dichloride, polymer with

2,5-didodecyl-1,4-benzenediol (9CI) (CA INDEX NAME)

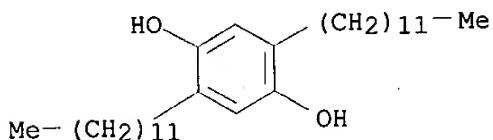
CM 1

CRN 82799-91-5
CMF C12 H6 C12 N2 O2

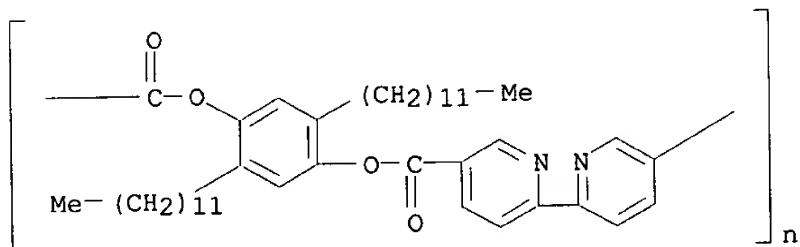


CM 2

CRN 60236-78-4
CMF C30 H54 O2



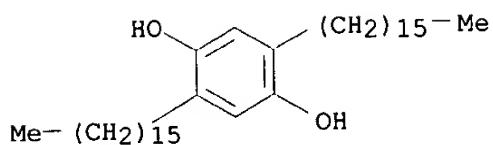
RN 271583-97-2 HCAPLUS
CN Poly[[2,2'-bipyridine]-5,5'-diylcarbonyloxy(2,5-didodecyl-1,4-phenylene)oxycarbonyl] (9CI) (CA INDEX NAME)



RN 271583-99-4 HCAPLUS
CN [2,2'-Bipyridine]-5,5'-dicarbonyl dichloride, polymer with
2,5-dihexadecyl-1,4-benzenediol (9CI) (CA INDEX NAME)

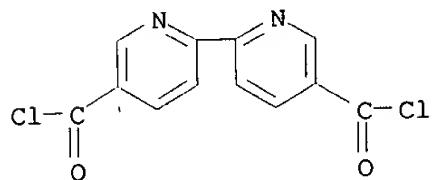
CM 1

CRN 271583-98-3
CMF C38 H70 O2

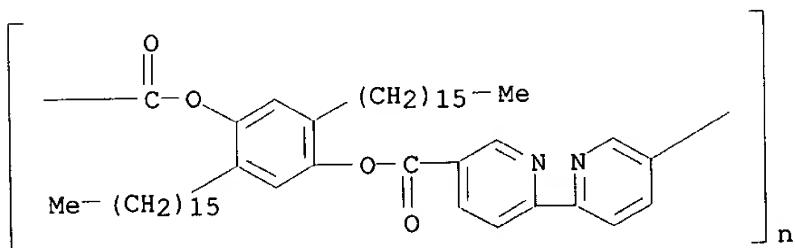


CM 2

CRN 82799-91-5
CMF C12 H6 Cl2 N2 O2



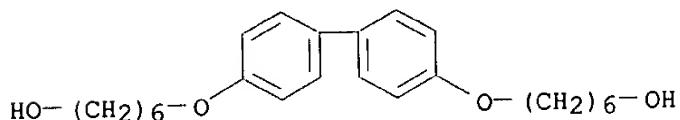
RN 271584-00-0 HCPLUS
CN Poly[[2,2'-bipyridine]-5,5'-diylcarbonyloxy(2,5-dihexadecyl-1,4-phenylene)oxycarbonyl] (9CI) (CA INDEX NAME)



RN 271584-01-1 HCPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with 6,6'--[[1,1'-biphenyl]-4,4'-diylbis(oxy)]bis[1-hexanol] (9CI) (CA INDEX NAME)

CM 1

CRN 97087-90-6
CMF C24 H34 O4

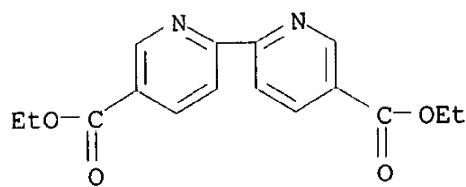


CM 2

CRN 1762-46-5

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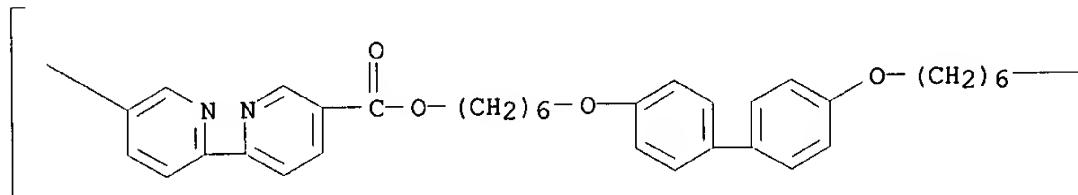
CMF C16 H16 N2 O4



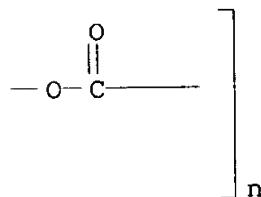
RN 271584-02-2 HCAPLUS

CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,6-hexanediylloxy[1,1'-biphenyl]-4,4'-diyloxy-1,6-hexanediylloxycarbonyl) (9CI) (CA INDEX NAME)

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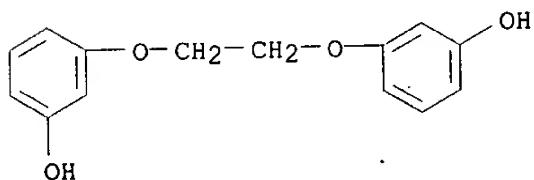
RN 271584-03-3 HCAPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with 3,3'-(1,2-ethanediylbis(oxy))bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 61166-00-5

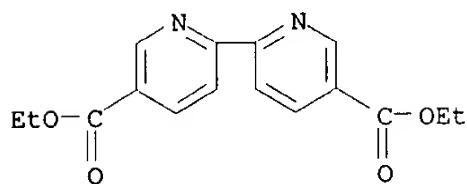
CMF C14 H14 O4



CM 2

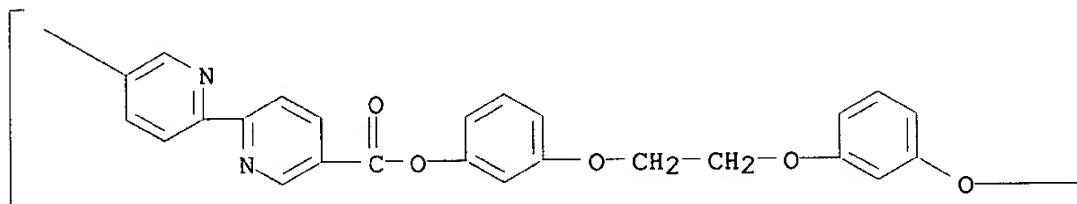
THOMPSON 09/879752 Page 75

CRN 1762-46-5
CMF C16 H16 N2 O4

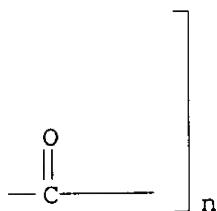


RN 271584-04-4 HCAPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,3-phenyleneoxy-1,2-ethanediyoxy-1,3-phenyleneoxycarbonyl) (9CI) (CA INDEX NAME)

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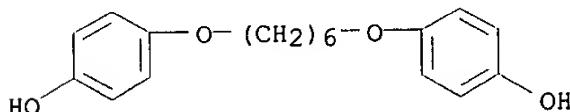
PAGE 1-B



RN 271584-05-5 HCAPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with 4,4'-(1,6-hexanediyloxy)biphenol (9CI) (CA INDEX NAME)

CM 1

CRN 70856-78-9
CMF C18 H22 O4

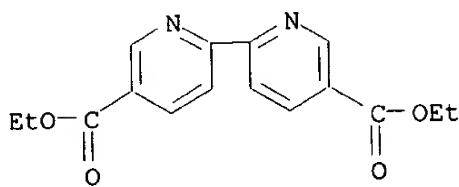


CM 2

CRN 1762-46-5

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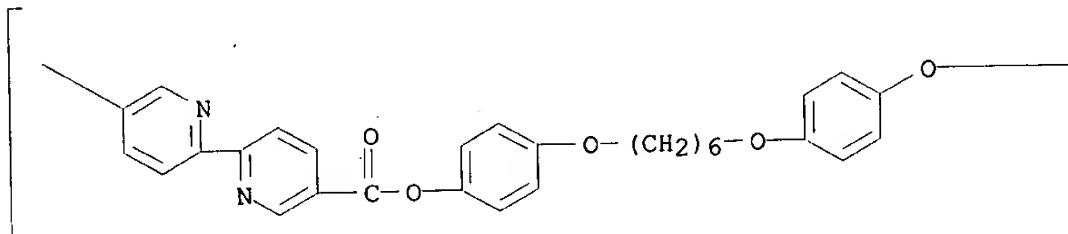
CMF C16 H16 N2 O4



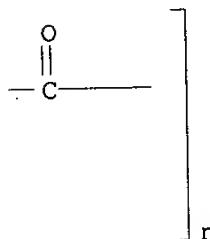
RN 271584-06-6 HCPLUS

CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,4-phenyleneoxy-1,6-hexanediyloxy-1,4-phenyleneoxycarbonyl) (9CI) (CA INDEX NAME)

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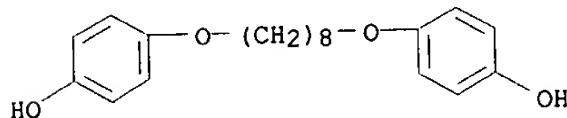
RN 271584-07-7 HCPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with 4,4'-(1,8-octanediylbis(oxy))bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 70856-68-7

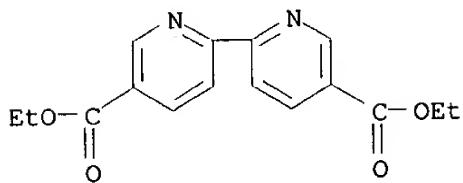
CMF C20 H26 O4



CM 2

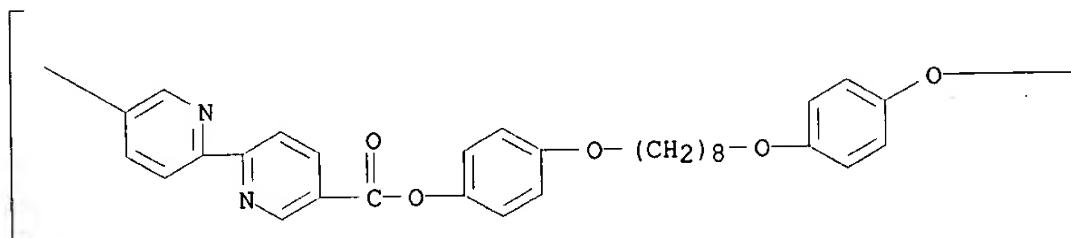
THOMPSON 09/879752 Page 77

CRN 1762-46-5
CMF C16 H16 N2 O4

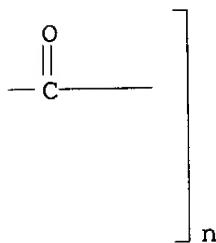


RN 271584-08-8 HCPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,4-phenyleneoxy-1,8-octanediyloxy-1,4-phenyleneoxycarbonyl) (9CI) (CA INDEX NAME)

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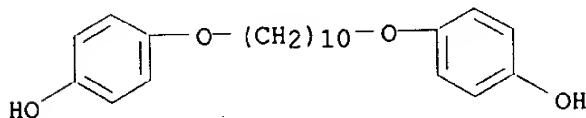
PAGE 1-B



RN 271584-09-9 HCPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with 4,4'-(1,10-decanediylbis(oxy))bis[phenol] (9CI) (CA INDEX NAME)

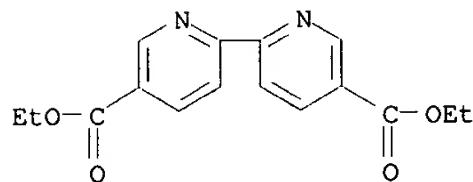
CM 1

CRN 70856-53-0
CMF C22 H30 O4



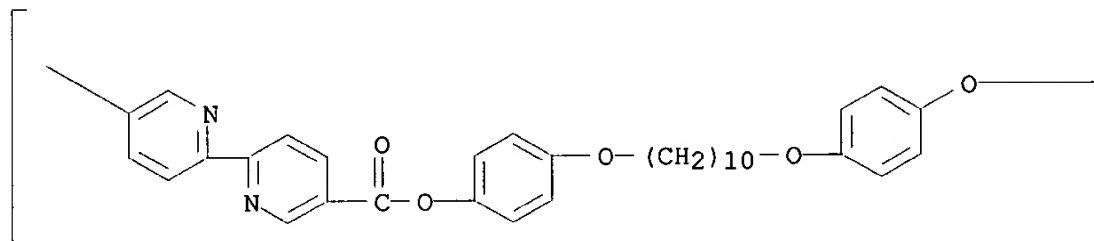
CM 2

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CMF C16 H16 N2 O4

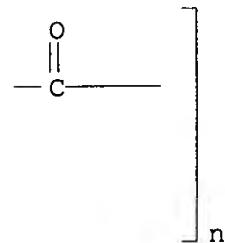


RN 271584-10-2 HCPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,4-phenyleneoxy-1,10-decanediyl oxy-1,4-phenyleneoxycarbonyl) (9CI) (CA INDEX NAME)

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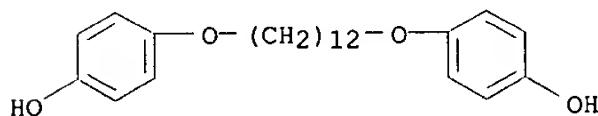
PAGE 1-B



RN 271584-11-3 HCPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with 4,4'-(1,12-dodecanediylbis(oxy))bis[phenol] (9CI) (CA INDEX NAME)

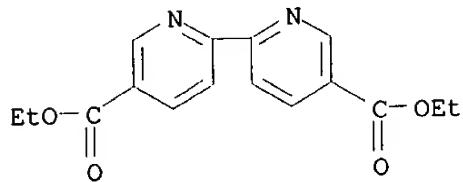
CM 1

CRN 132955-76-1
CMF C24 H34 O4



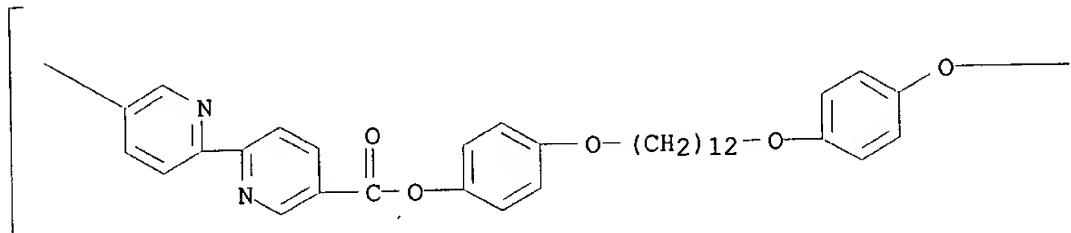
CM 2

CRN 1762-46-5
CMF C16 H16 N2 O4

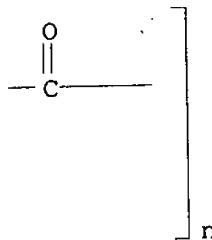


RN 271584-12-4 HCPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,4-phenyleneoxy-1,12-dodecanediyl) (9CI) (CA INDEX NAME)

PAGE 1-A



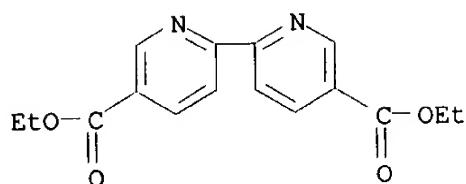
PAGE 1-B



RN 271584-13-5 HCPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with 1,2-ethanediol (9CI) (CA INDEX NAME)

CM 1

CRN 1762-46-5
CMF C16 H16 N2 O4

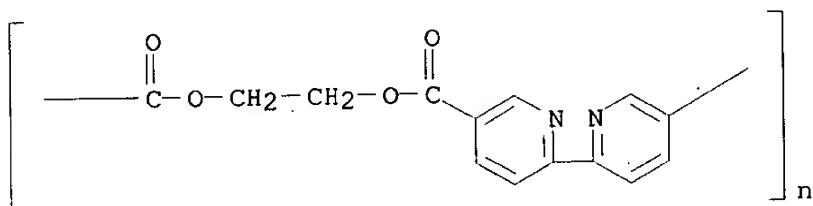


CM 2

CRN 107-21-1
CMF C2 H6 O2

HO—CH₂—CH₂—OH

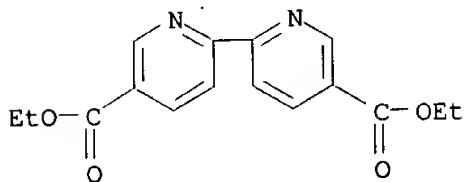
RN 271584-14-6 HCPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,2-ethanediylloxycarbonyl)
(9CI) (CA INDEX NAME)



RN 271584-15-7 HCPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with
1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 1762-46-5
CMF C16 H16 N2 O4



CM 2

CRN 110-63-4
CMF C4 H10 O2

HO—(CH₂)₄—OH

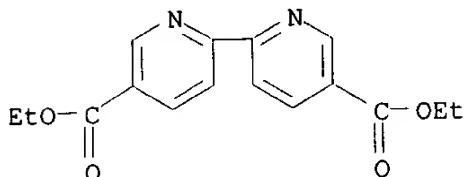
RN 271584-16-8 HCAPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with
1,5-pentanediol (9CI) (CA INDEX NAME)

CM 1

CRN 1762-46-5

CMF C16 H16 N2 O4



CM 2

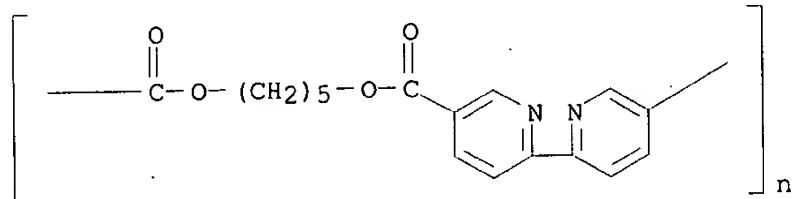
CRN 111-29-5

CMF C5 H12 O2

HO-(CH₂)₅-OH

RN 271584-17-9 HCAPLUS

CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,5-pentanediylloxycarbonyl)
(9CI) (CA INDEX NAME)



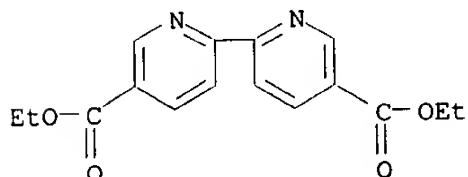
RN 271584-18-0 HCAPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with
1,6-hexanediol (9CI) (CA INDEX NAME)

CM 1

CRN 1762-46-5

CMF C16 H16 N2 O4

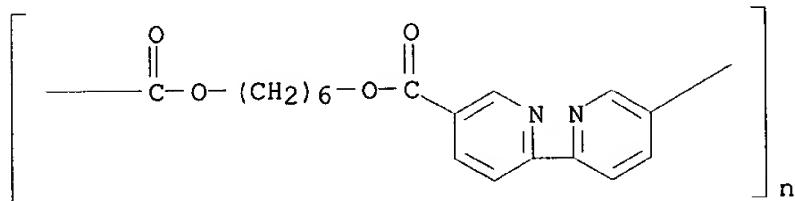


CM 2

CRN 629-11-8
CMF C6 H14 O2

HO-(CH₂)₆-OH

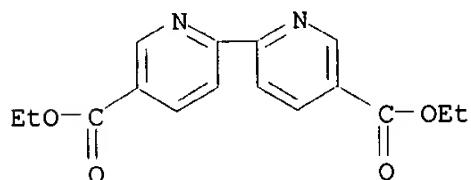
RN 271584-19-1 HCPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,6-hexanediyloxycarbonyl)
(9CI) (CA INDEX NAME)



RN 271584-20-4 HCPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with
1,7-heptanediol (9CI) (CA INDEX NAME)

CM 1

CRN 1762-46-5
CMF C16 H16 N2 O4

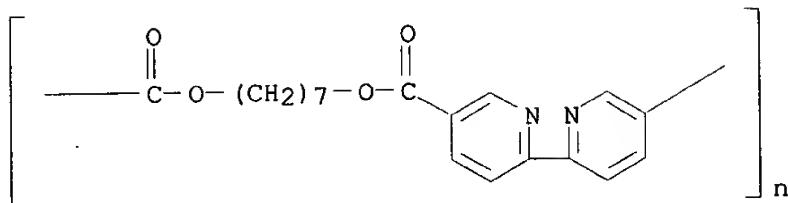


CM 2

CRN 629-30-1
CMF C7 H16 O2

HO-(CH₂)₇-OH

RN 271584-21-5 HCPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,7-heptanediyloxycarbonyl)
(9CI) (CA INDEX NAME)



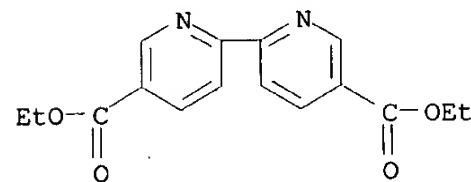
RN 271584-22-6 HCAPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with
1,8-octanediol (9CI) (CA INDEX NAME)

CM 1

CRN 1762-46-5

CMF C16 H16 N2 O4



CM 2

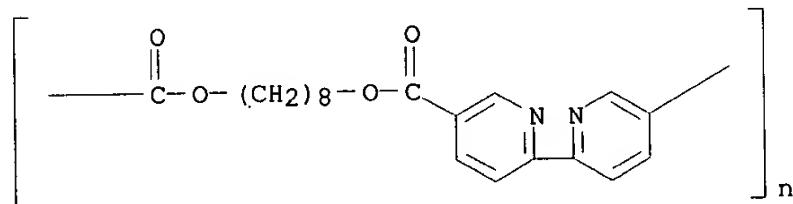
CRN 629-41-4

CMF C8 H18 O2

HO-(CH₂)₈-OH

RN 271584-23-7 HCAPLUS

CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,8-octanediyloxycarbonyl)
(9CI) (CA INDEX NAME)



RN 271584-24-8 HCAPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with
1,9-nanediol (9CI) (CA INDEX NAME)

CM 1

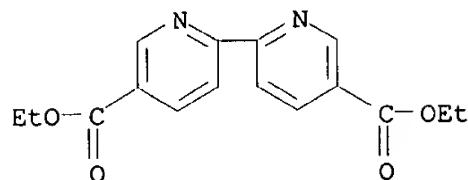
CRN 3937-56-2

CMF C9 H20 O2

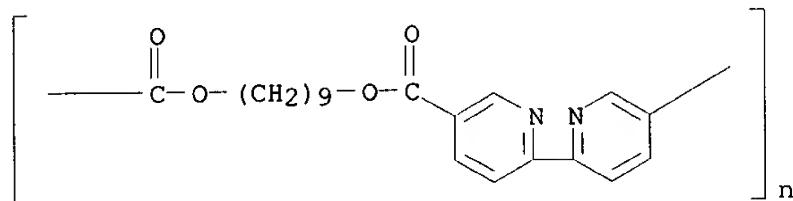
HO—(CH₂)₉—OH

CM 2

CRN 1762-46-5
CMF C₁₆ H₁₆ N₂ O₄



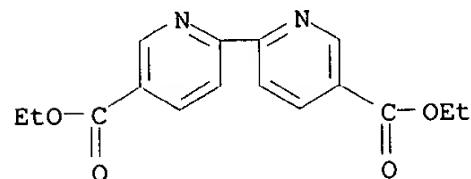
RN 271584-25-9 HCPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,9-nonanediyloxycarbonyl)
(9CI) (CA INDEX NAME)



RN 271584-26-0 HCPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with
1,10-decanediol (9CI) (CA INDEX NAME)

CM 1

CRN 1762-46-5
CMF C₁₆ H₁₆ N₂ O₄

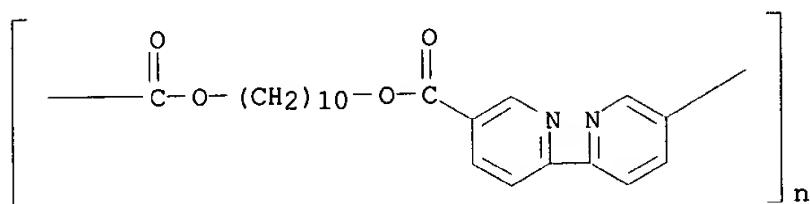


CM 2

CRN 112-47-0
CMF C₁₀ H₂₂ O₂

HO—(CH₂)₁₀—OH

RN 271584-27-1 HCPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,10-decanediylloxycarbonyl)
(9CI) (CA INDEX NAME)



RN 271584-28-2 HCPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with
1,12-dodecanediol (9CI) (CA INDEX NAME)

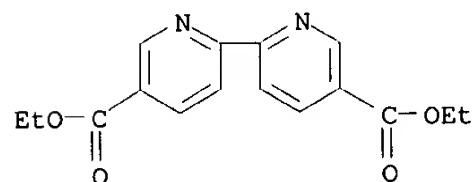
CM 1

CRN 5675-51-4
CMF C12 H26 O2

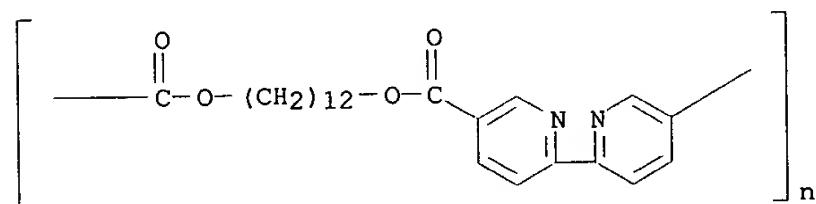
HO—(CH₂)₁₂—OH

CM 2

CRN 1762-46-5
CMF C16 H16 N2 O4



RN 271584-29-3 HCPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,12-dodecanediylloxycarbonyl)
(9CI) (CA INDEX NAME)



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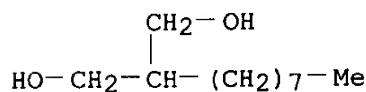
RN 271584-30-6 HCAPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with
2-octyl-1,3-propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 74971-70-3

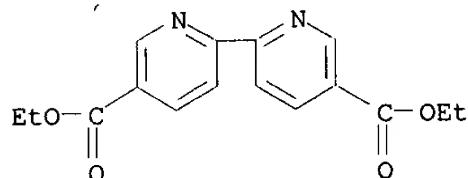
CMF C11 H24 O2



CM 2

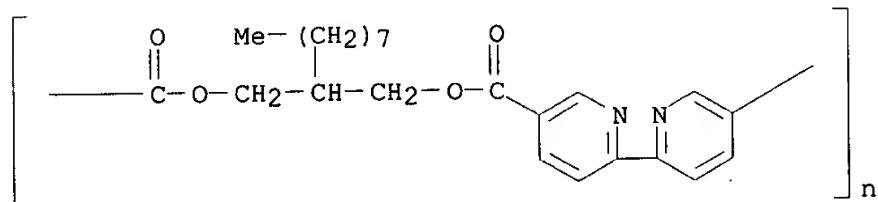
CRN 1762-46-5

CMF C16 H16 N2 O4



RN 271584-31-7 HCAPLUS

CN Poly[[(2,2'-bipyridine)-5,5'-diylcarbonyloxy(2-octyl-1,3-propanediyl)oxycarbonyl] (9CI) (CA INDEX NAME)



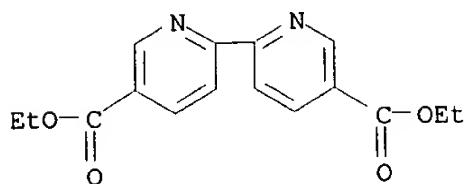
RN 271584-32-8 HCAPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with
2,2-dimethyl-1,3-propanediol (9CI) (CA INDEX NAME)

CM 1

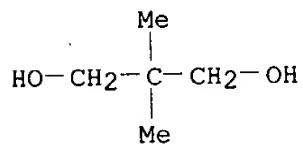
CRN 1762-46-5

CMF C16 H16 N2 O4

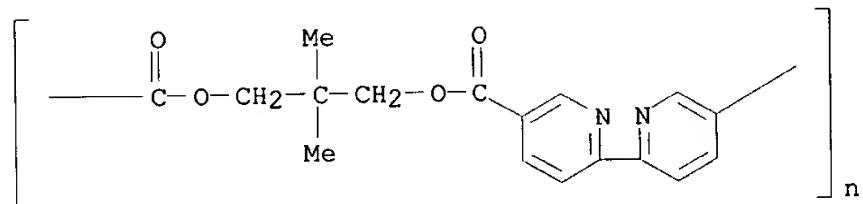


CM 2

CRN 126-30-7
CMF C5 H12 O2



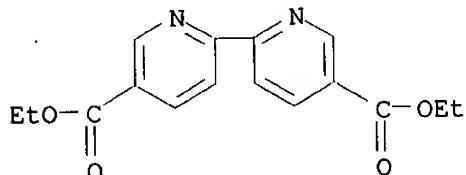
RN 271584-33-9 HCPLUS
CN Poly[[2,2'-bipyridine]-5,5'-diylcarbonyloxy(2,2-dimethyl-1,3-propanediyl)oxygen carbonyl] (9CI) (CA INDEX NAME)



RN 271584-34-0 HCPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with 2,2-diethyl-1,3-propanediol (9CI) (CA INDEX NAME)

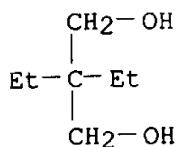
CM 1

CRN 1762-46-5
CMF C16 H16 N2 O4

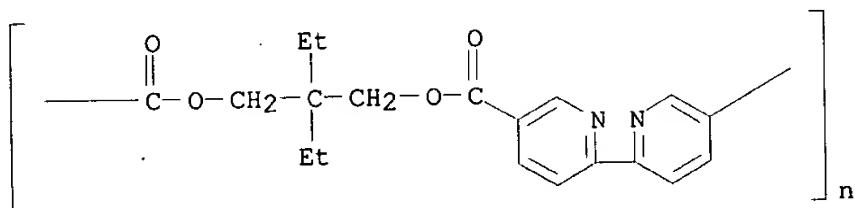


CM 2

CRN 115-76-4
CMF C7 H16 O2



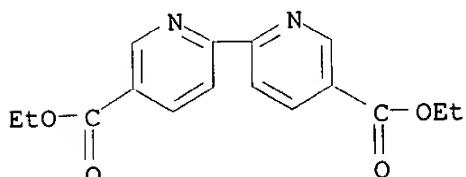
RN 271584-35-1 HCPLUS
CN Poly[*[2,2'-bipyridine]-5,5'*-diylcarbonyloxy(2,2-diethyl-1,3-propanediyl)oxycarbonyl] (9CI) (CA INDEX NAME)



RN 271584-36-2 HCPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with 2-methyl-2-propyl-1,3-propanediol (9CI) (CA INDEX NAME)

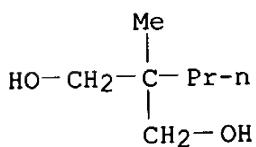
CM 1

CRN 1762-46-5
CMF C16 H16 N2 O4

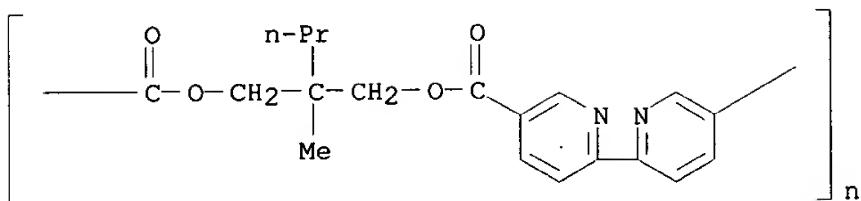


CM 2

CRN 78-26-2
CMF C7 H16 O2



RN 271584-37-3 HCPLUS
CN Poly[*[2,2'-bipyridine]-5,5'*-diylcarbonyloxy(2-methyl-2-propyl-1,3-propanediyl)oxycarbonyl] (9CI) (CA INDEX NAME)



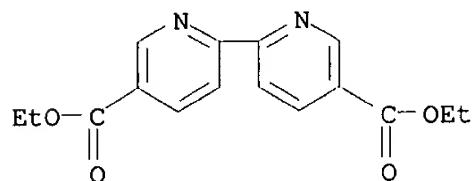
RN 271584-38-4 HCAPLUS

CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with 2-butyl-2-ethyl-1,3-propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 1762-46-5

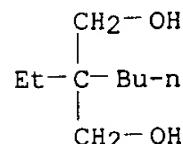
CMF C16 H16 N2 O4



CM 2

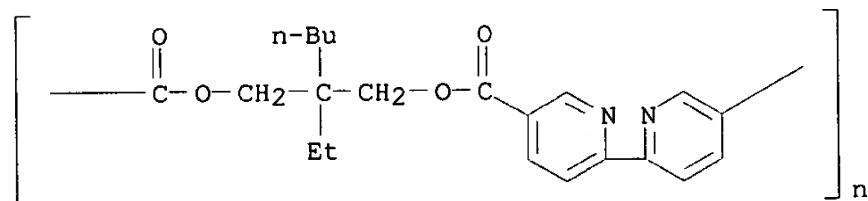
CRN 115-84-4

CMF C9 H20 O2



RN 271584-39-5 HCAPLUS

CN Poly[[2,2'-bipyridine]-5,5'-diylcarbonyloxy(2-butyl-2-ethyl-1,3-propanediyl)oxycarbonyl] (9CI) (CA INDEX NAME)

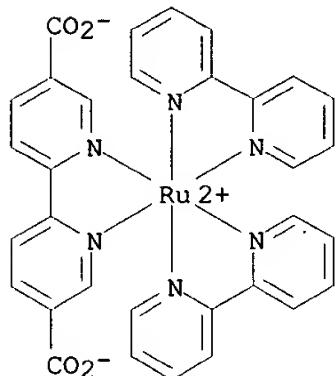


RN 271781-83-0 HCAPLUS

CN Ruthenium, bis(2,2'-bipyridine-.kappa.N1,.kappa.N1')[[2,2'-bipyridine]-5,5'-dicarboxylato(2-)-.kappa.N1,.kappa.N1']-, (OC-6-22)-, dihydrochloride, polymer with [1,1'-biphenyl]-4,4'-diamine and [2,2'-bipyridine]-5,5'-dicarboxylic acid (9CI) (CA INDEX NAME)

CM 1

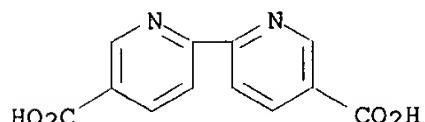
CRN 258334-13-3
CMF C32 H22 N6 O4 Ru . 2 Cl H
CCI CCS



●2 HCl

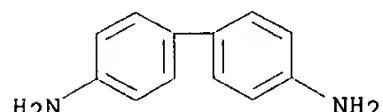
CM 2

CRN 1802-30-8
CMF C12 H8 N2 O4



CM 3

CRN 92-87-5
CMF C12 H12 N2

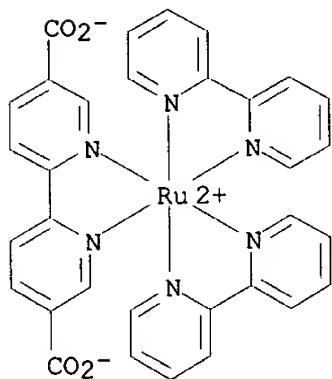


RN 271781-84-1 HCAPLUS
CN Ruthenium, bis(2,2'-bipyridine-.kappa.N1,.kappa.N1')[[2,2'-bipyridine]-5,5'-dicarboxylato(2-)-.kappa.N1,.kappa.N1']-, (OC-6-22)-, dihydrochloride, polymer with [2,2'-bipyridine]-5,5'-dicarboxylic acid and 4,4'-(2,2,2-trifluoro-1-(trifluoromethyl)ethylidene)bis[benzenamine] (9CI)

(CA INDEX NAME)

CM 1

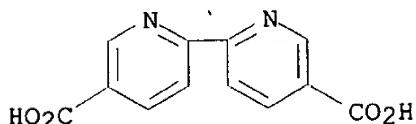
CRN 258334-13-3
CMF C32 H22 N6 O4 Ru . 2 Cl H
CCI CCS



●2 HCl

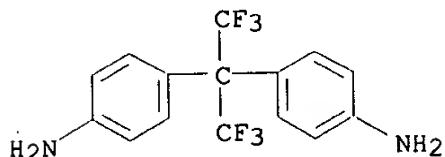
CM 2

CRN 1802-30-8
CMF C12 H8 N2 O4



CM 3

CRN 1095-78-9
CMF C15 H12 F6 N2

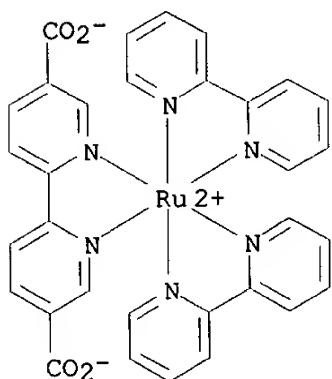


RN 271781-85-2 HCPLUS
CN Ruthenium, bis(2,2'-bipyridine-.kappa.N1,.kappa.N1')[{2,2'-bipyridine}-

5,5'-dicarboxylato(2-)-.kappa.N1,.kappa.N1')-, (OC-6-22)-,
dihydrochloride, polymer with [2,2'-bipyridine]-5,5'-dicarboxylic acid and
2,2'-(1,2-ethenediyyl)bis[5-aminobenzenesulfonic acid] (9CI) (CA INDEX
NAME)

CM 1

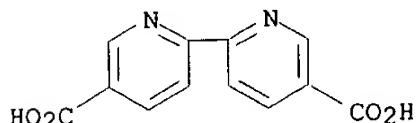
CRN 258334-13-3
CMF C32 H22 N6 O4 Ru . 2 Cl H
CCI CCS



●2 HCl

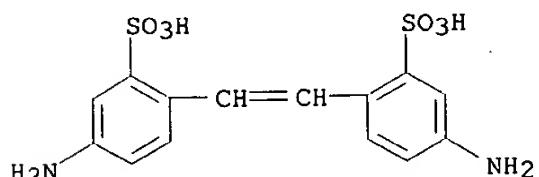
CM 2

CRN 1802-30-8
CMF C12 H8 N2 O4



CM 3

CRN 81-11-8
CMF C14 H14 N2 O6 S2



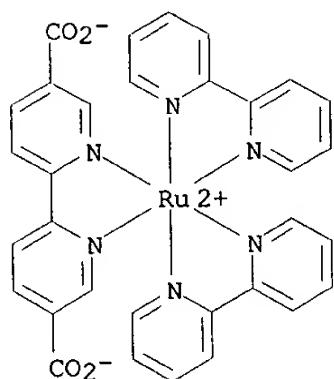
RN 271781-86-3 HCAPLUS
CN Ruthenium, bis(2,2'-bipyridine-.kappa.N1,.kappa.N1')[[2,2'-bipyridine]-5,5'-dicarboxylato(2-).kappa.N1,.kappa.N1']-, (OC-6-22)-, dihydrochloride, polymer with [2,2'-bipyridine]-5,5'-dicarboxylic acid and 1,5-naphthalenediamine (9CI) (CA INDEX NAME)

CM 1

CRN 258334-13-3

CMF C32 H22 N6 O4 Ru . 2 Cl H

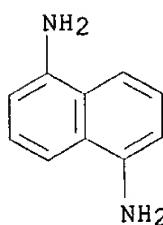
CCI CCS



●2 HCl

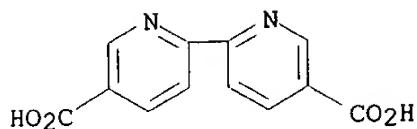
CM 2

CRN 2243-62-1
CMF C10 H10 N2

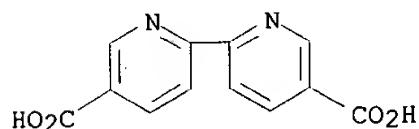


CM 3

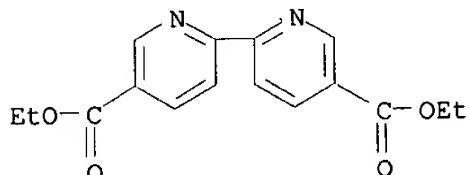
CRN 1802-30-8
CMF C12 H8 N2 O4



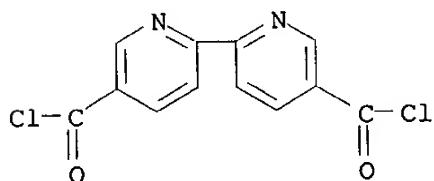
IT 1802-30-8, 2,2'-Bipyridine-5,5'-dicarboxylic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis and properties of polyamides and polyesters based on
2,2'-bipyridine-5,5'-dicarboxylic acid and corresponding
polymer-ruthenium complexes)
RN 1802-30-8 HCAPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid (8CI, 9CI) (CA INDEX NAME)



IT 1762-46-5P, Diethyl-2,2'-bipyridine-5,5'-dicarboxylate
82799-91-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(synthesis and properties of polyamides and polyesters based on
2,2'-bipyridine-5,5'-dicarboxylic acid and corresponding
polymer-ruthenium complexes)
RN 1762-46-5 HCAPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester (9CI) (CA INDEX
NAME)



RN 82799-91-5 HCAPLUS
CN [2,2'-Bipyridine]-5,5'-dicarbonyl dichloride (9CI) (CA INDEX NAME)



IT 7440-18-8DP, Ruthenium, complexes with 2,2'-bipyridyl chain
fragment -contg. polyesters, preparation 271584-11-3DP,
ruthenium complexes 271584-12-4DP, ruthenium complexes
RL: SPN (Synthetic preparation); PREP (Preparation)

(synthesis and properties of polyamides and polyesters based on
2,2'-bipyridine-5,5'-dicarboxylic acid and corresponding
polymer-ruthenium complexes)

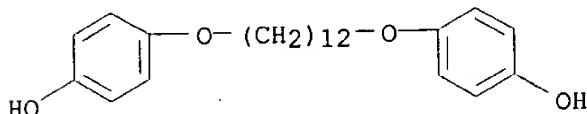
RN 7440-18-8 HCPLUS
CN Ruthenium (8CI, 9CI) (CA INDEX NAME)

Ru

RN 271584-11-3 HCPLUS
CN [2,2'-Bipyridine]-5,5'-dicarboxylic acid, diethyl ester, polymer with
4,4'-(1,12-dodecanediylbis(oxy))bis[phenol] (9CI) (CA INDEX NAME)

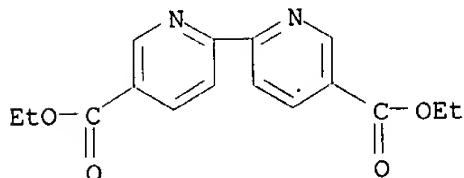
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CRN 132955-76-1
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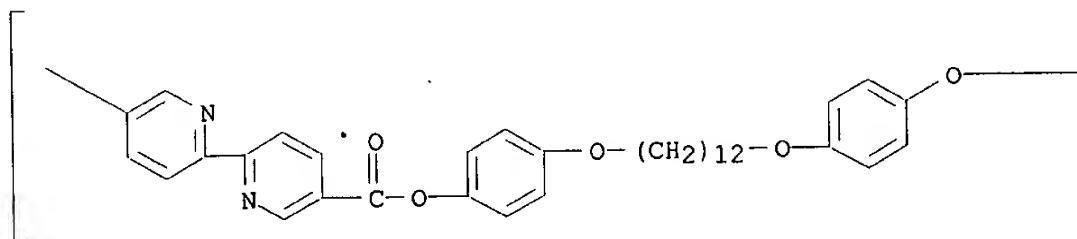
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CRN 1762-46-5
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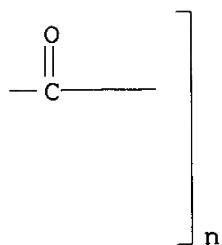


RN 271584-12-4 HCPLUS
CN Poly([2,2'-bipyridine]-5,5'-diylcarbonyloxy-1,4-phenyleneoxy-1,12-dodecanediylcarbonyloxy-1,4-phenyleneoxycarbonyl) (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RE.CNT 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L58 ANSWER 19 OF 36 HCAPLUS COPYRIGHT 2002 ACS
 AN 2000:171705 HCAPLUS
 DN 132:279624
 TI Synthesis and ionochromic properties of chelating conjugated polymers
 AU Bouachrine, Mohammed; Lere-Porte, Jean-Pierre; Moreau, Joel J. E.; Serein-Spirau, Francoise; Torreilles, Christophe
 CS Hetero chimie Moleculaire et Macromoleculaire, CNRS UMR 5076, Ecole Nationale Supérieure de Chimie, Montpellier, 34296, Fr.
 SO Journal of Materials Chemistry (2000), 10(2), 263-268
 CODEN: JMACEP; ISSN: 0959-9428
 PB Royal Society of Chemistry
 DT Journal
 LA English
 AB Two types of conjugated **copolymers** functionalized by chelating subunits were prep'd. using the palladium catalyzed coupling reaction of a dihalogenated substrate contg. a coordinating unit and a bis(tributylstanny) conjugated reagent. The synthesis is based on Stille coupling of a dihaloarom. compd. and a bis(tributylstanny) arom. species in the presence of Pd(0) catalyst to obtain conjugated alternating polymers with main chain chelating subunits to introduce complexing properties and thiylene-p-(2,5-dialkoxy)phenylene units to bring luminescent and electrochromic properties. When the chelating unit is a dibenzo-18-crown-6 ether, a weak coordination of Li⁺ or K⁺ ions was obsd.; no ionochromic properties were obsd. in the presence of alkali metals. When 2,2'-bipyridyl is the coordinating entity, the copolymer exhibits reversible ionochromic response in the presence of transition metal ions both in soln. and in the solid state. The ionochromic properties were also obsd. upon protonation-deprotonation of the copolymer in soln. and in the solid state. The polymers are of interest for development of sensor materials.
 CC 35-7 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 36, 73
 ST chelating conjugated alternating polymer prepn Stille coupling; thiylene alkoxyphenylene benzocrown ether polymer prepn chelation; bipyridyl coordinating alternating copolymer ionochromic activity
 IT Polymerization
 (Stille coupling; prepn. via Stille coupling and ionochromic properties of conjugated polymers based on thielenes and alkoxyphenlenes and chelating monomers)
 IT Coupling reaction catalysts
 (Stille; prepn. via Stille coupling and ionochromic properties of conjugated polymers based on thielenes and alkoxyphenlenes)

- and chelating monomers)
- IT Polymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(conjugated; prepn. via Stille coupling and ionochromic properties of conjugated polymers based on thilenes and alkoxyphenylenes and chelating monomers)
- IT Electrochromism
(ionochromism; prepn. via Stille coupling and ionochromic properties of conjugated polymers based on thielenes and alkoxyphenylenes and chelating monomers)
- IT Polyethers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polythiophene, crown; prepn. via Stille coupling and ionochromic properties of conjugated polymers based on thielenes and alkoxyphenylenes and chelating monomers)
- IT Polyamines
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polythiophene; prepn. via Stille coupling and ionochromic properties of conjugated polymers based on thielenes and alkoxyphenylenes and chelating monomers)
- IT Polymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polythiophenes, polyether, crown and polyamine; prepn. via Stille coupling and ionochromic properties of conjugated polymers based on thielenes and alkoxyphenylenes and chelating monomers)
- IT Chelation
Luminescence, electroluminescence
Oxidation potential
UV and visible spectra
(prepn. via Stille coupling and ionochromic properties of conjugated polymers based on thielenes and alkoxyphenylenes and chelating monomers)
- IT Protonation
(reversible; prepn. via Stille coupling and ionochromic properties of conjugated polymers based on thielenes and alkoxyphenylenes and chelating monomers)
- IT 14221-01-3, Tetrakis(triphenylphosphine)palladium
RL: CAT (Catalyst use); USES (Uses)
(Stille coupling polymn. catalyst; prepn. via Stille coupling and ionochromic properties of conjugated polymers based on thielenes and alkoxyphenylenes and chelating monomers)
- IT 263843-44-3P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(hexaoxacyclooctadecin; prepn. via Stille coupling and ionochromic properties of conjugated polymers based on thielenes and alkoxyphenylenes and chelating monomers)
- IT 263772-52-7P, 1,4-Dibromo-2,5-bis(2-butoxyethoxy)benzene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate and monomer; prepn. via Stille coupling and ionochromic properties of conjugated polymers based on thielenes and alkoxyphenylenes and chelating monomers)
- IT 263772-51-6P 263772-53-8P, 1,4-Bis(2-thienyl)-2,5-dioctyloxybenzene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; prepn. via Stille coupling and ionochromic properties of conjugated polymers based on thielenes and alkoxyphenylenes and chelating monomers)
- IT 263772-54-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)

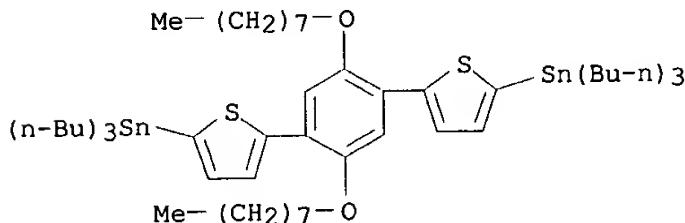
(monomer; prepn. via Stille coupling and ionochromic properties of conjugated polymers based on thiénylenes and alkoxyphenylenes and chelating monomers)

- IT 156028-40-9, 1,4-Dibromo-2,5-bis(octyloxy)benzene
 RL: CAT (Catalyst use); USES (Uses)
 (prep. via Stille coupling and ionochromic properties of conjugated polymers based on thiénylenes and alkoxyphenylenes and chelating monomers)
- IT 14701-21-4, Silver(1+), processes 16065-88-6, Palladium(2+), processes 17341-24-1, Lithium(1+), processes 17493-86-6, Copper(1+), processes 23713-49-7, Zinc(2+), processes 24203-36-9, Potassium(1+), processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (prep. via Stille coupling and ionochromic properties of conjugated polymers based on thiénylenes and alkoxyphenylenes and chelating monomers)
- IT 263772-56-1P 263772-57-2P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (prep. via Stille coupling and ionochromic properties of conjugated polymers based on thiénylenes and alkoxyphenylenes and chelating monomers)
- IT 106-37-6, p-Dibromobenzene 109-72-8, n-Butyllithium, reactions 110-02-1, Thiophene 111-76-2, 2-Butoxyethanol 1461-22-9,
 Tributyl(chloro)stannane
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prep. via Stille coupling and ionochromic properties of conjugated polymers based on thiénylenes and alkoxyphenylenes and chelating monomers)
- IT 76-05-1, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (protonation reagent; prep. via Stille coupling and ionochromic properties of conjugated polymers based on thiénylenes and alkoxyphenylenes and chelating monomers)
- IT 263772-56-1P 263772-57-2P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (prep. via Stille coupling and ionochromic properties of conjugated polymers based on thiénylenes and alkoxyphenylenes and chelating monomers)
- RN 263772-56-1 HCPLUS
 CN 2,2'-Bipyridine, 5,5'-diido-, polymer with [[2,5-bis(octyloxy)-1,4-phenylene]di-5,2-thiophenediyl]bis[tributylstannane] (9CI) (CA INDEX NAME)

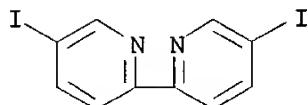
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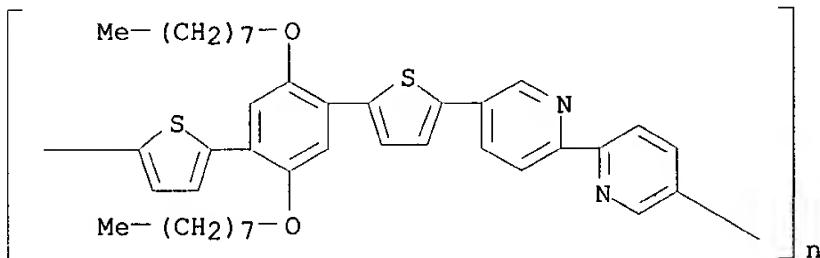
CMF C54 H94 O2 S2 Sn2



CM 2

CRN 209624-09-9
CMF C10 H6 I2 N2

RN 263772-57-2 HCAPLUS
 CN Poly[[2,2'-bipyridine]-5,5'-diyl-2,5-thiophenediyl[2,5-bis(octyloxy)-1,4-phenylene]-2,5-thiophenediyl] (9CI) (CA INDEX NAME)



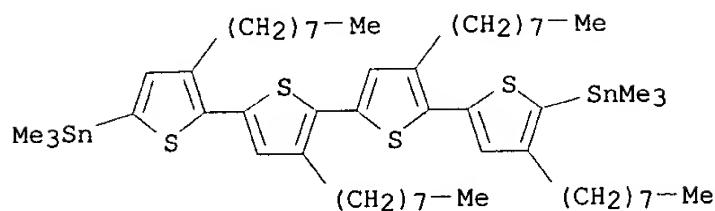
RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L58 ANSWER 20 OF 36 HCAPLUS COPYRIGHT 2002 ACS
 AN 2000:158584 HCAPLUS
 DN 132:265580
 TI Synthesis, electrochemical and **electroluminescent** properties of oligothiophene-based conjugated **polymers**
 AU Trouillet, L.; Lapkowski, M.; Stephan, O.; Guillerez, S.
 CS SI3M/EMSI, Departement de Recherche Fondamentale sur la Matiere Condensee, CEA Grenoble, Grenoble, 38054, Fr.
 SO Synthetic Metals (2000), 109(1-3), 277-280
 CODEN: SYMEDZ; ISSN: 0379-6779
 PB Elsevier Science S.A.
 DT Journal
 LA English
 AB The paper deals with a new conjugated **polymer** having the possibility to form a complex with transition **metals**. The conjugated backbone is constituted by the alternation of regioregular alkylated oligothiophene of variable size and of 2,2'-bipyridine as the chelating unit. Electrochem. studies were conducted on both the non-**metalated** and Ru(II) complex forms together with the in-situ conductance measurement showing that p- and n-doping occur. The non-**metalated** form was shown to exhibit **electroluminescent** properties.
 CC 35-8 (Chemistry of Synthetic High **Polymers**)
 Section cross-reference(s): 73, 76
 ST synthesis alkylated oligothiophene bipyridine **polymer** ruthenium complex; conjugated **polymer** electrochem doping **electroluminescence**
 IT Redox reaction
 (electrochem.; synthesis and electrochem. and

- electroluminescent properties of oligothiophene-based conjugated polymers and their ruthenium complexes)
- IT Polymers, preparation
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(polythiophenes, bipyridine group-contg.; synthesis and electrochem. and electroluminescent properties of oligothiophene-based conjugated polymers and their ruthenium complexes)
- IT Doping
Electric current-potential relationship
Electric resistance
Electroluminescent devices
Luminescence, electroluminescence
(synthesis and electrochem. and electroluminescent properties of oligothiophene-based conjugated polymers and their ruthenium complexes)
- IT 242461-10-5P 263010-02-2P
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(synthesis and electrochem. and electroluminescent properties of oligothiophene-based conjugated polymers and their ruthenium complexes)
- IT 242461-11-6P 263010-03-3P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(synthesis and electrochem. and electroluminescent properties of oligothiophene-based conjugated polymers and their ruthenium complexes)
- IT 7440-18-8DP, Ruthenium, complexes, preparation
242461-10-5DP, complexes with ruthenium 242461-11-6DP,
complexes with ruthenium 263010-02-2DP, complexes with ruthenium
263010-03-3DP, complexes with ruthenium
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(synthesis and electrochem. and electroluminescent properties of oligothiophene-based conjugated polymers and their ruthenium complexes)
- IT 7429-90-5, Aluminum, uses 50926-11-9, ITO
RL: DEV (Device component use); USES (Uses)
(synthesis and electrochem. and electroluminescent properties of oligothiophene-based conjugated polymers and their ruthenium complexes and use of prep'd. polymers in LED)
- IT 242461-10-5P 263010-02-2P
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(synthesis and electrochem. and electroluminescent properties of oligothiophene-based conjugated polymers and their ruthenium complexes)
- RN 242461-10-5 HCPLUS
- CN 2,2'-Bipyridine, 5,5'-dibromo-, polymer with (3',3'',3''',4-tetraoctyl[2,2':5',2'':5'',2'''-quaterthiophene]-5,5'''-diyl)bis(trimethylstannane] (9CI) (CA INDEX NAME)

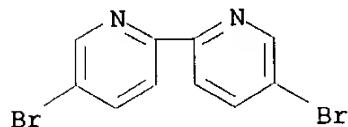
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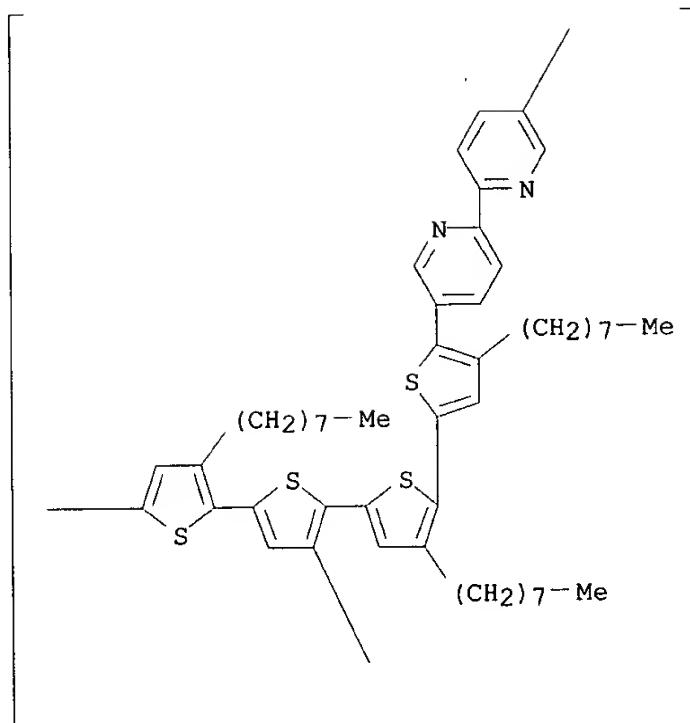
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CRN 15862-18-7
CMF C10 H6 Br2 N2

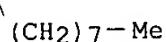


RN 263010-02-2 HCAPLUS
CN Poly[2,2'-bipyridine]-5,5'-diyl(3',3'',3''',4-tetraoctyl[2,2':5',2'':5'',2'''-quaterthiophene]-5,5'''-diyl] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IT 242461-11-6P 263010-03-3P

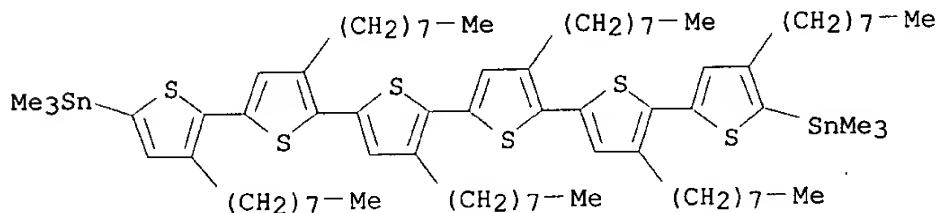
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(synthesis and electrochem. and electroluminescent properties
of oligothiophene-based conjugated polymers and their
ruthenium complexes)

RN 242461-11-6 HCAPLUS

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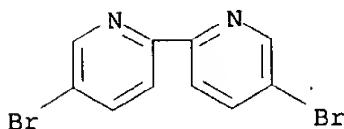
CME C78 H126 S6 Sn2



CM 2

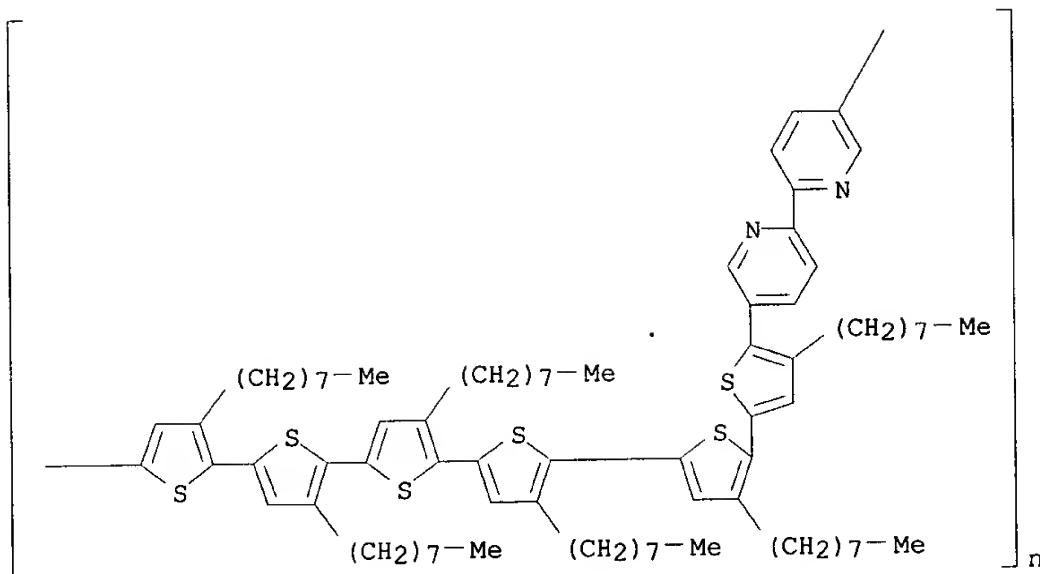
CRN 15862-18-7

CMF C10 H6 Br2 N2



RN 263010-03-3 HCAPLUS

RN 2600-00-0
CN Poly[[2,2'-bipyridine]-5,5'-diyl(3',3'',3''',3''',3''',3''',4-hexaoctyl[2,2':5',2':5'',2':5''',2':5''',2':5'''',2':5'''-sexithiophene]-5,5''''-diyl)] (9CI) (CA INDEX NAME)



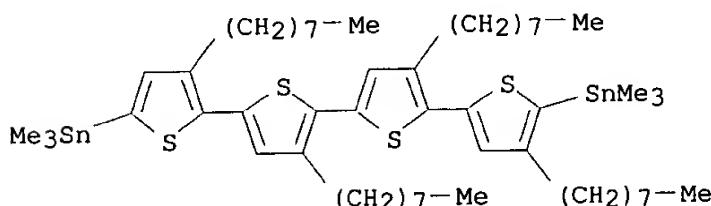
IT 7440-18-8DP, Ruthenium, complexes, preparation
 242461-10-5DP, complexes with ruthenium 242461-11-6DP,
 complexes with ruthenium 263010-02-2DP, complexes with ruthenium
 263010-03-3DP, complexes with ruthenium
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN
 (Synthetic preparation); PREP (Preparation); PROC (Process)
 (synthesis and electrochem. and **electroluminescent** properties
 of oligothiophene-based conjugated **polymers** and their
 ruthenium complexes)

RN 7440-18-8 HCAPLUS
 CN Ruthenium (8CI, 9CI) (CA INDEX NAME)

Ru

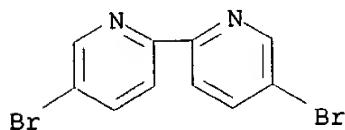
RN 242461-10-5 HCAPLUS
 CN 2,2'-Bipyridine, 5,5'-dibromo-, polymer with (3',3'',3''',4-
 tetraoctyl[2,2':5',2'':5'',2'''-quaterthiophene]-5,5'''-
 diyl)bis(trimethylstannane] (9CI) (CA INDEX NAME)

CM 1

CRN 242461-08-1
 CMF C54 H90 S4 Sn2

CM 2

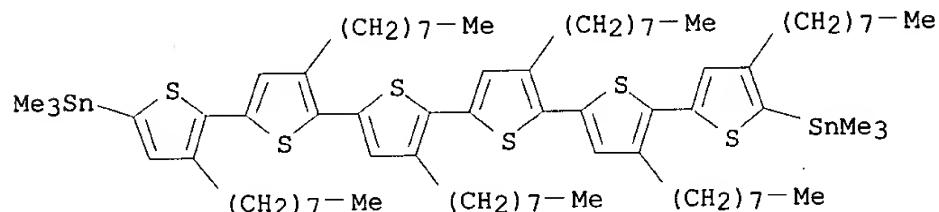
CRN 15862-18-7
CMF C10 H6 Br2 N2



RN 242461-11-6 HCAPLUS
CN 2,2'-Bipyridine, 5,5'-dibromo-, polymer with (3',3'',3''',3''',3''',4-hexaoctyl[2,2':5',2'':5'',2'''':5''',2''':5''',2''':5''-sexithiophene]-5,5''''-diyl)bis(trimethylstannane] (9CI) (CA INDEX NAME)

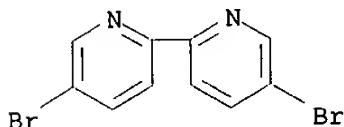
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CRN 242461-09-2
CMF C78 H126 S6 Sn2



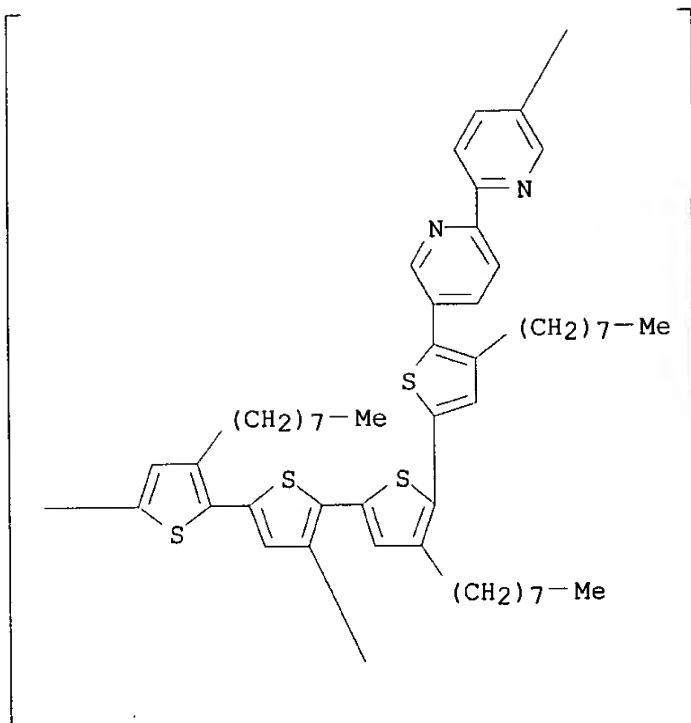
CM 2

CRN 15862-18-7
CMF C10 H6 Br2 N2



RN 263010-02-2 HCAPLUS
CN Poly[[2,2'-bipyridine]-5,5'-diyl(3',3'',3''',4-tetraoctyl[2,2':5',2'':5'',2'''':5''',2''':5''-quaterthiophene]-5,5''''-diyl)] (9CI) (CA INDEX NAME)

PAGE 1-A

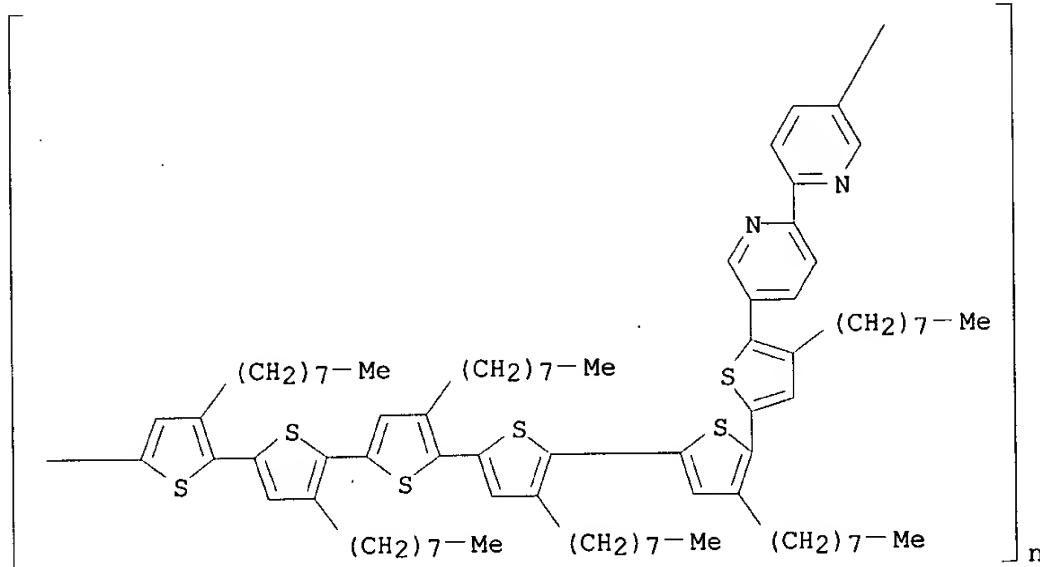


PAGE 2-A

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 $(\text{CH}_2)_7-\text{Me}$

n

RN 263010-03-3 HCAPLUS



IT 50926-11-9, ITO

RL: DEV (Device component use); USES (Uses)
(synthesis and electrochem. and **electroluminescent** properties
of oligothiophene-based conjugated **polymers** and their
ruthenium complexes and use of prep'd. **polymers** in LED)

RN 50926-11-9 HCAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

1.58 ANSWER 21 OF 36 HCAPLUS COPYRIGHT 2002 ACS

ANSWER 21 OF 30 HCAPLUS
AN 2000:145056 HCAPLUS

AN 2000.14505
DN 132-191388

DN 152:191588
TI Optical oxidative enzyme-based sensors

II Optical Oxidative Enzyme Based Sensors
IN Collins, Thomas C.; Munkholm, Christiane; Slovacek, Rudolf E.

IN 881111, Thomas C., Har
PA Bayer Corporation, USA

PA Bayer Corporation, USA
SO PCT Int Appl 34 PP

SU PCT INT. APP., 34 pp.
CODEN: RIXXD2

CODEN: PIXADZ
DT: Patent

Patent
English

LA English

FAN.CNT 1
DATE:

PATENT NO. KIND DATE APPLICATION NO. DATE
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PI WO 2000011205 A1 20000302 WO 1999-IB1451 19990819

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ,
DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,
JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK,
MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,
TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ,
MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,
CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 9951883 A1 20000314 AU 1999-51883 19990819
EP 1112374 A1 20010704 EP 1999-936915 19990819

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO

JP 2002523733 T2 20020730 JP 2000-566457 19990819

PRAI US 1998-137616 A1 19980821
WO 1999-IB1451 W 19990819

AB The invention discloses enzyme-based optical sensors for detecting blood components which are substrates for oxidative enzymes, the sensors advantageously employing a multiple-layer structure featuring a thin, rapidly-responding, optical, oxygen-sensing layer. The sensors comprise, in order, a) an enzymic layer contg. an oxidative enzyme or enzyme cascade in a water and oxygen-permeable matrix; b) an oxygen sensing layer contg. luminescent dye in a light-transmissive, oxygen-permeable matrix; and which is preferably deposited onto c) a light-transmissive substrate. Embodiments of the invention may further include a rapidly hydrating gas-permeable cover, or spacer, layer deposited over the enzymic layer. A particulate filler material may be included in an effective amt. in the oxygen sensing layer to reduce sample light scattering effects. The sensors of the disclosure may be used to detect creatinine and other enzyme-oxidizable analytes such as glucose, lactate or cholesterol, and may be made easily using std. coating techniques known in the art. These sensors are suitable for multiple analyses, but the materials and methods used allow the sensors to be disposable as well, allowing their wide use in medical and anal. applications. Glucose sensors were made by prepg. an oxygen-sensing layer (contg. styrene-acrylonitrile **copolymer** and octaethyl-Pt-porphyrin dye) as a coating on a light transmissive substrate and depositing a glucose oxidase layer (in N,N-dimethylacrylamide-N-tert-butylacrylamide **copolymer**) onto the oxygen-sensing layer.

IC ICM C12Q001-00

ICS C12Q001-54; C12Q001-26; G01N021-76

CC 9-1 (Biochemical Methods)

Section cross-reference(s): 7

IT Luminescent substances

Luminescent substances

(dyes; optical oxidative enzyme-based sensors)

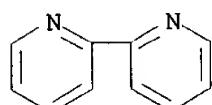
IT 66-71-7D, 1,10-Phenanthroline, metal complexes 101-60-0D,
Porphyrin, derivs., metal complexes 366-18-7D,
2,2'-Bipyridine, metal complexes 1662-01-7D,
4,7-Diphenyl-1,10-phenanthroline, metal complexes 3248-05-3D,
4,7-Dimethyl-1,10-phenanthroline, metal complexes 4199-89-7D,
5-Chloro-1,10-phenanthroline, metal complexes 7440-18-8D
, Ruthenium, complexes, uses 13816-21-2D, 2,2'-Bithiazole, metal
complexes 14187-14-5 16065-83-1D, Chromium(III), ligand complexes,
uses 16065-89-7D, Rhodium³⁺, ligand complexes, uses 22541-59-9D, Ru²⁺,
ligand complexes, uses 22542-07-0D, Osmium²⁺, ligand complexes, uses
22555-00-6D, Iridium(III), ligand complexes, uses 31248-39-2
40000-20-2D, 5-Bromo-1,10-phenanthroline, metal complexes
41601-87-0D, 2,2'-Bi-2-thiazoline, metal complexes 63373-04-6
73797-39-4 80528-89-8 98240-12-1D, metal complexes
259810-85-0 259810-86-1

RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(as luminescent dye in oxygen-sensing layer; optical oxidative enzyme-based sensors)

IT 9003-54-7P, Acrylonitrile-styrene copolymer 129219-08-5P
RL: ARU (Analytical role, unclassified); DEV (Device component use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(prepn. of, in glucose sensor prepn.; optical oxidative enzyme-based sensors)

IT 366-18-7D, 2,2'-Bipyridine, metal complexes
7440-18-8D, Ruthenium, complexes, uses
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(as luminescent dye in oxygen-sensing layer; optical oxidative enzyme-based sensors)

RN 366-18-7 HCAPLUS
CN 2,2'-Bipyridine (8CI, 9CI) (CA INDEX NAME)



RN 7440-18-8 HCAPLUS
CN Ruthenium (8CI, 9CI) (CA INDEX NAME)

Ru

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

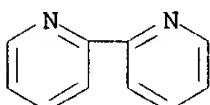
L58 ANSWER 22 OF 36 HCAPLUS COPYRIGHT 2002 ACS
AN 1999:766366 HCAPLUS
DN 132:181176
TI Luminescent characteristics of transparent metal-containing polymer materials
AU Smagin, V. P.; Maier, R. A.; Mokrousov, G. M.; Belov, V. M.; Evstigneev, V. V.
CS Altaiiskii Gos. Univ., Barnaul, Russia
SO Perspektivnye Materialy (1998), (6), 38-41
CODEN: PRMTFY; ISSN: 1028-978X
PB TOO "Interkontakt Nauka"
DT Journal
LA Russian
AB Spectral luminescence characteristics of rare metal-contg. PMMA are presented. The materials can be used as low-band light filters for luminescent medium.
CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 73
ST luminescence transparent rare earth metal PMMA
IT Luminescence
Luminescent substances
(luminescent characteristics of transparent rare metal-contg. PMMA)
IT 66-71-7, 1,10-Phenanthroline 366-18-7, 2,2'-Bipyridine

7440-00-8, Neodymium, properties 7440-53-1, Europium, properties
 79621-17-3, Xylene orange
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
 (luminescent characteristics of transparent rare metal-contg.
 PMMA)

IT 9011-14-7, PMMA
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (luminescent characteristics of transparent rare metal-contg.
 PMMA)

IT 366-18-7, 2,2'-Bipyridine 7440-53-1, Europium,
 properties
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
 (luminescent characteristics of transparent rare metal-contg.
 PMMA)

RN 366-18-7 HCAPLUS
 CN 2,2'-Bipyridine (8CI, 9CI) (CA INDEX NAME)



RN 7440-53-1 HCAPLUS
 CN Europium (8CI, 9CI) (CA INDEX NAME)

Eu

L58 ANSWER 23 OF 36 HCAPLUS COPYRIGHT 2002 ACS
 AN 1999:699542 HCAPLUS
 DN 132:36150
 TI Synthesis and characterization of partially crosslinked poly(N-vinylcarbazole-vinyl alcohol) copolymers with polypyridyl Ru(II) luminophores. Potential materials for electroluminescence
 AU Farah, Abdiaziz A.; Pietro, William J.
 CS Dep. Chemistry, York Univ., Toronto, ON, M3J 1P3, Can.
 SO Polymer Bulletin (Berlin) (1999), 43(2-3), 135-142
 CODEN: POBUDR; ISSN: 0170-0839
 PB Springer-Verlag
 DT Journal
 LA English
 AB A novel difunctionalized 5,5'-dibromomethylene-2,2'-bipyridine ligand was prep'd. and covalently bound with concurrent crosslinking by a post-polymer modification method to N-vinylcarbazole-vinyl alc. copolymer. The electrochem. and UV-vis spectroscopy results both confirm the covalent attachment of ruthenium transition metal complex to the polymer backbone. Differential scanning calorimetry (DSC) and thermogravimetric anal. (TGA) indicate high thermal stability of the copolymer. The copolymer is also highly phosphorescent making it a potential polymeric material for transition metal-based electroluminescent devices.
 CC 35-8 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 29
 ST bipyridine crosslinked vinylcarbazole vinyl alc polymer ruthenium complex
 IT 92642-09-6P, 5,5'-Dibromomethyl-2,2'-bipyridine

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(crosslinker, ligand; prepn. of bipyridine crosslinker for poly(vinylcarbazole-vinyl alc.) metal complexes)

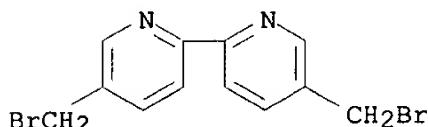
IT 7440-18-8DP, Ruthenium, complexes with bipyridyl-crosslinked vinylcarbazole-vinyl alc. **copolymer**, preparation 15746-57-3DP, Bis(2,2'-bipyridine)ruthenium dichloride, reaction products with bipyridyl-crosslinked vinylcarbazole-vinyl alc. **copolymer**
252572-95-5DP, 5,5'-Dibromomethyl-2,2'-bipyridine-vinyl alcohol-N-vinylcarbazole **copolymer**, ruthenium complexes
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (prepn. and properties of bipyridine-crosslinked poly(vinylcarbazole-vinyl alc.) ruthenium complexes)

IT 108-99-6, 3-Picoline
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of bipyridine crosslinker for poly(vinylcarbazole-vinyl alc.) metal complexes)

IT 1762-34-1P, 5,5'-Dimethyl-2,2'-bipyridine
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of bipyridine crosslinker for poly(vinylcarbazole-vinyl alc.) metal complexes)

IT 92642-09-6P, 5,5'-Dibromomethyl-2,2'-bipyridine
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(crosslinker, ligand; prepn. of bipyridine crosslinker for poly(vinylcarbazole-vinyl alc.) metal complexes)

RN 92642-09-6 HCPLUS
CN 2,2'-Bipyridine, 5,5'-bis(bromomethyl)- (9CI) (CA INDEX NAME)



IT 7440-18-8DP, Ruthenium, complexes with bipyridyl-crosslinked vinylcarbazole-vinyl alc. **copolymer**, preparation
252572-95-5DP, 5,5'-Dibromomethyl-2,2'-bipyridine-vinyl alcohol-N-vinylcarbazole **copolymer**, ruthenium complexes
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (prepn. and properties of bipyridine-crosslinked poly(vinylcarbazole-vinyl alc.) ruthenium complexes)

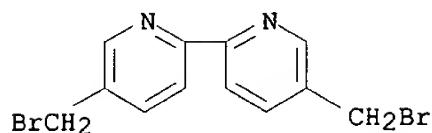
RN 7440-18-8 HCPLUS
CN Ruthenium (8CI, 9CI) (CA INDEX NAME)

Ru

RN 252572-95-5 HCPLUS
CN Ethenol, polymer with 5,5'-bis(bromomethyl)-2,2'-bipyridine and 9-ethenyl-9H-carbazole (9CI) (CA INDEX NAME)

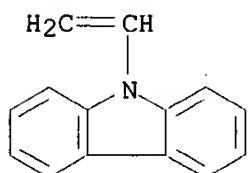
CM 1

CRN 92642-09-6
CMF C12 H10 Br2 N2



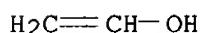
CM 2

CRN 1484-13-5
CMF C14 H11 N

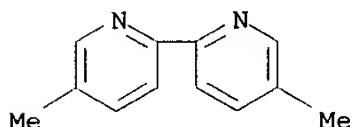


CM 3

CRN 557-75-5
CMF C2 H4 O



IT 1762-34-1P, 5,5'-Dimethyl-2,2'-bipyridine
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(prepn. of bipyridine crosslinker for poly(vinylcarbazole-vinyl alc.)
metal complexes)
RN 1762-34-1 HCPLUS
CN 2,2'-Bipyridine, 5,5'-dimethyl- (9CI) (CA INDEX NAME)

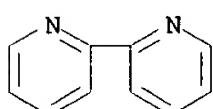


RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

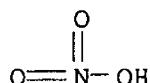
L58 ANSWER 24 OF 36 HCPLUS COPYRIGHT 2002 ACS
AN 1999:643445 HCPLUS
DN 131:352198
TI Intensely Luminescent Materials Obtained by Combining Lanthanide
Ions, 2,2'-Bipyridine, and Poly(ethylene glycol) in Various Fluid or Solid
Environments
AU Bekiari, Vlasoula; Pistolis, Georgios; Lianos, Panagiotis

CS Engineering Science Department, University of Patras, Patras, 26500, Greece
SO Chemistry of Materials (1999), 11(11), 3189-3195
CODEN: CMATEX; ISSN: 0897-4756
PB American Chemical Society
DT Journal
LA English
AB Steady-state luminescence spectroscopy and luminescence decay anal. have been employed to study the assocn. of two rare earth ions (i.e., Eu³⁺ and Tb³⁺) with poly(ethylene glycol) in the absence and in the presence of 2,2'-bipyridine, which acted as an antenna of near-UV radiation. Three different systems have been studied at various **polymer** concns., i.e., aq. solns., transparent composite org./inorg. sol-gel matrixes made by hydrolysis of tetramethoxysilane, and **polymer** matrixes. The photophys. behavior of the luminescent species has been studied in conjunction with the poly(ethylene glycol) content. In both aq. solns. and silica matrixes, luminescence intensity and decay time were found to increase by increasing **polymer** concn. Addn. of 2,2'-bipyridine resulted in complex formation between the ligand and the lanthanide ions. This complex was stabilized by assocn. with the **polymer** chains. Excitation at the ligand absorption wavelength (337 nm) resulted in ligand-to-metal energy transfer and strong luminescence emission, characterized by the narrow-band emission of the metal. The complex between lanthanide ions and 2,2'-bipyridine possessed its own particular photophys. characteristics and emitted a bright broad blue luminescence with an excitation max. around 380 nm. Freeze-drying of aq. solns. of medium size poly(ethylene glycol) contg. lanthanide ions and 2,2'-bipyridine produced an intensely luminescent solid material emitting the characteristic luminescence of the metal when excited at the ligand absorption band (337 nm) or the characteristic luminescence of the complex when excited at 380 nm.
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 37, 73
ST luminescent lanthanide ion bipyridine polyethylene glycol
IT Energy level excitation
Energy transfer
Fluorescence
Luminescence
 Luminescent substances
 (intensely luminescent materials obtained by combining lanthanide ions, 2,2'-bipyridine, and poly(ethylene glycol) in various fluid or sol-gel environments)
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (intensely luminescent materials obtained by combining lanthanide ions, 2,2'-bipyridine, and poly(ethylene glycol) in various fluid or sol-gel environments)
IT 366-18-7, 2,2'-Bipyridine 10043-27-3, Terbium nitrate (Tb(NO₃)₃) 10138-01-9, Europium nitrate (Eu(NO₃)₃) 25322-68-3, Poly(ethylene glycol)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (intensely luminescent materials obtained by combining lanthanide ions, 2,2'-bipyridine, and poly(ethylene glycol) in various fluid or sol-gel environments)
IT 681-84-5, TMOS
RL: NUU (Other use, unclassified); USES (Uses)
 (sol-gel; intensely luminescent materials obtained by combining lanthanide ions, 2,2'-bipyridine, and poly(ethylene glycol) in various fluid or sol-gel environments)

IT 366-18-7, 2,2'-Bipyridine 10043-27-3, Terbium nitrate
 (Tb(NO₃)₃) 10138-01-9, Europium nitrate (Eu(NO₃)₃)
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (intensely luminescent materials obtained by combining
 lanthanide ions, 2,2'-bipyridine, and poly(ethylene glycol) in
 various fluid or sol-gel environments)
 RN 366-18-7 HCAPLUS
 CN 2,2'-Bipyridine (8CI, 9CI) (CA INDEX NAME)

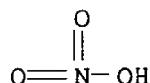


RN 10043-27-3 HCAPLUS
 CN Nitric acid, terbium(3+) salt (8CI, 9CI) (CA INDEX NAME)



1/3 Tb(III)

RN 10138-01-9 HCAPLUS
 CN Nitric acid, europium(3+) salt (8CI, 9CI) (CA INDEX NAME)



1/3 Eu(III)

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 25 OF 36 HCAPLUS COPYRIGHT 2002 ACS
 AN 1999:559286 HCAPLUS
 DN 132:208232
 TI Design and synthesis of light emitting conjugated
 polymers functionalized with transition metal complexes
 AU Ng, Po King; Wong, Chi Tak; Hou, Sijian; Chan, Wai Kin
 CS Department of Chemistry, University of Hong Kong, Hong Kong, Peop. Rep.
 China
 SO Polymer Preprints (American Chemical Society, Division of Polymer
 Chemistry) (1999), 40(2), 1212-1213
 CODEN: ACPPAY; ISSN: 0032-3934
 PB American Chemical Society, Division of Polymer Chemistry
 DT Journal
 LA English
 AB Different conjugated polymers based on poly(benzobisoxazoles),

poly(benzobisthiazoles), and poly(phenylenevinylene) which contain ruthenium bipyridine or terpyridine complexes were synthesized. The polymers were fabricated into single layer light emitting devices and their electroluminescent properties were studied. The turn on voltages and the external quantum efficiencies of the devices are in the range of 4-8 V and 0.05-0.1%, resp. Some polymers exhibit distinct emission bands originated from the conjugate main-chain and ruthenium complex, while in other systems the emission from the main-chain is quenched. An energy transfer process between the main-chain and the ruthenium complex is proposed. The polymers exhibit modest hole and electron carrier mobilities comparable to common org. conjugated polymers. This design approach provides the flexibility of modifying the optoelectronic properties by varying the ligand, metal, or metal content in the polymers.

- CC 35-7 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 73
- ST ruthenium complex conjugated polymer light emitting; polybenzobisoxazole ruthenium complex light emitting; polybenzobisthiazole ruthenium complex light emitting; polyphenylenevinylene ruthenium complex light emitting
- IT Polybenzoxazoles
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polybenzobisoxazoles; prepn. of light emitting conjugated polymers contg. ruthenium bipyridine or terpyridine complexes)
- IT Polybenzothiazoles
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polybenzobisthiazoles; prepn. of light emitting conjugated polymers contg. ruthenium bipyridine or terpyridine complexes)
- IT Electron mobility
 Luminescence, electroluminescence
 (prepn. of light emitting conjugated polymers contg. ruthenium bipyridine or terpyridine complexes)
- IT Poly(arylenealkenylenes)
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (prepn. of light emitting conjugated polymers contg. ruthenium bipyridine or terpyridine complexes)
- IT 7440-18-8DP, Ruthenium, complexes with poly(benzobisoxazoles) and poly(benzobisthiazoles), preparation 193484-95-6P 212050-16-3DP, ruthenium complexes 212050-17-4DP, ruthenium complexes 212050-18-5DP, ruthenium complexes 212050-19-6DP, ruthenium complexes
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (prepn. of light emitting conjugated polymers contg. ruthenium bipyridine or terpyridine complexes)
- IT 7440-18-8DP, Ruthenium, complexes with poly(benzobisoxazoles) and poly(benzobisthiazoles), preparation 212050-16-3DP, ruthenium complexes 212050-17-4DP, ruthenium complexes 212050-18-5DP, ruthenium complexes 212050-19-6DP, ruthenium complexes
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (prepn. of light emitting conjugated

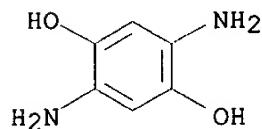
(polymers contg. ruthenium bipyridine or terpyridine complexes)
RN 7440-18-8 HCAPLUS
CN Ruthenium (8CI, 9CI) (CA INDEX NAME)

Ru

RN 212050-16-3 HCAPLUS
CN [2,2'-Bipyridine]-4,4'-dicarboxylic acid, polymer with
2,5-diamino-1,4-benzenediol dihydrochloride (9CI) (CA INDEX NAME)

CM 1

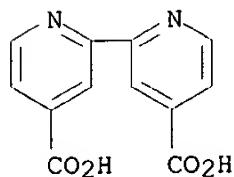
CRN 24171-03-7
CMF C6 H8 N2 O2 . 2 Cl H



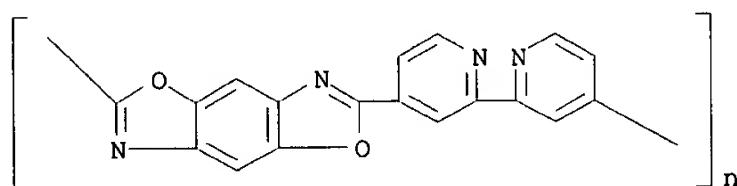
●2 HCl

CM 2

CRN 6813-38-3
CMF C12 H8 N2 O4



RN 212050-17-4 HCAPLUS
CN Poly(benzo[1,2-d:4,5-d']bisoxazole-2,6-diyl[2,2'-bipyridine]-4,4'-diyl)
(9CI) (CA INDEX NAME)

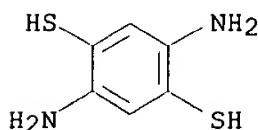


* RN 212050-18-5 HCAPLUS
CN [2,2'-Bipyridine]-4,4'-dicarboxylic acid, polymer with
2,5-diamino-1,4-benzenedithiol dihydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 75464-52-7

CMF C6 H8 N2 S2 . 2 Cl H

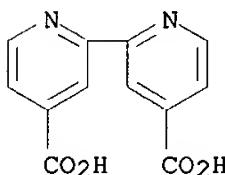


● 2 HCl

CM 2

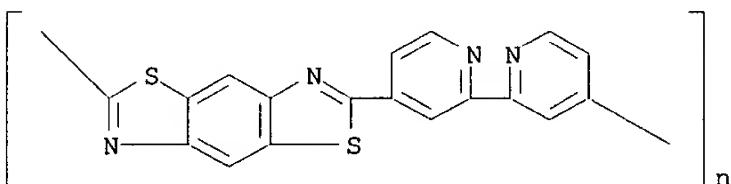
CRN 6813-38-3

CMF C12 H8 N2 O4



RN 212050-19-6 HCPLUS

CN Poly(benzo[1,2-d:4,5-d']bisthiazole-2,6-diyl[2,2'-bipyridine]-4,4'-diyl)
(9CI) (CA INDEX NAME)



RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 26 OF 36 HCPLUS COPYRIGHT 2002 ACS

AN 1999:173784 HCPLUS

DN 130:325447

TI Electronic and Light-Emitting Properties of Some
Polyimides Based on Bis(2,2':6',2''-terpyridine) Ruthenium(II) Complex

AU Ng, Wai Yue; Gong, Xiong; Chan, Wai Kin

CS Department of Chemistry, University of Hong Kong, Hong Kong

SO Chemistry of Materials (1999), 11(4), 1165-1170

CODEN: CMATEX; ISSN: 0897-4756

PB American Chemical Society

DT Journal

LA English

AB Novel arom. polyimides that contain bis(2,2':6',2''-terpyridine) ruthenium(II) complex were synthesized, and their optoelectronic properties were studied. The optical absorption band at 500 nm was strongly enhanced by the presence of the ruthenium complex. As a result, the photosensitivity of the polyimides in the visible region increased, as did the photocond. The glass transition temp. of the polyimides is approx. 220.degree. and they also exhibit modest thermal stability. The electron mobility and hole carrier mobility of the polyimides are on the order of 10⁻⁴ cm² V⁻¹ s⁻¹, which suggests that the electron-withdrawing diimide moieties play a role in the charge transport process. Emission from the metal complexes and charge transfer states were obsd. in these polymers. The polyimides also exhibited electroluminescent behavior when the polymer films were fabricated into single-layered test light-emitting diodes. The external quantum efficiency and max. luminance of the devices were 0.1% and 120 cd/m², resp.

CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36, 73

ST polyimide terpyridine ruthenium prepn optoelectronic property; photocond charge transfer ruthenium terpyridine arom polyimide; light emitting device quantum efficiency ruthenium terpyridine polyimide

IT Polyimides, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (arom., fluorine-contg., ruthenium terpyridine contg.; electronic and light-emitting properties of polyimides based on bis(terpyridine) ruthenium(II) and arom. dianhydrides)

IT Polyimides, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (arom., ruthenium terpyridine contg.; electronic and light-emitting properties of polyimides based on bis(terpyridine) ruthenium(II) and arom. dianhydrides)

IT Charge transfer state

Electron mobility

Electron-hole pairs

Electrooptical absorption

Glass transition temperature

Photoconductivity

Thermal stability

(electronic and light-emitting properties of polyimides based on bis(terpyridine) ruthenium(II) and arom. dianhydrides)

IT Polyimides, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (fluorine-contg., arom., ruthenium terpyridine contg.; electronic and light-emitting properties of polyimides based on bis(terpyridine) ruthenium(II) and arom. dianhydrides)

IT Electroluminescent devices

(light-emitting diodes; electronic and light-emitting properties of polyimides based on bis(terpyridine) ruthenium(II) and arom. dianhydrides)

IT Polyimides, preparation

Polyimides, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (polyether-, arom., ruthenium terpyridine contg.; electronic and light-emitting properties of polyimides based on bis(terpyridine) ruthenium(II) and arom. dianhydrides)

IT Fluoropolymers, preparation

Polyethers, preparation

Polyethers, preparation

- Polyketones
Polyketones
Polysulfones, preparation
Polysulfones, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyimide-, arom., ruthenium terpyridine contg.; electronic and
light-emitting properties of polyimides based on
bis(terpyridine) ruthenium(II) and arom. dianhydrides)
- IT Polyimides, preparation
Polyimides, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyketone-, arom., ruthenium terpyridine contg.; electronic and
light-emitting properties of polyimides based on
bis(terpyridine) ruthenium(II) and arom. dianhydrides)
- IT Polyimides, preparation
Polyimides, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polysulfone-, arom., ruthenium terpyridine contg.; electronic and
light-emitting properties of polyimides based on
bis(terpyridine) ruthenium(II) and arom. dianhydrides)
- IT 17084-13-8, Potassium hexafluorophosphate (KPF6)
RL: RCT (Reactant); RACT (Reactant or reagent)
(counterion reactant; electronic and **light-emitting**
properties of polyimides based on bis(terpyridine) ruthenium(II) and
arom. dianhydrides)
- IT 7429-90-5, Aluminum, uses 50926-11-9, ITO
RL: DEV (Device component use); USES (Uses)
(electrode; electronic and **light-emitting**
properties of polyimides based on bis(terpyridine) ruthenium(II) and
arom. dianhydrides)
- IT 223921-20-8P, Bis[4'-(4-aminophenyl)-2,2':6',2'''-terpyridyl]ruthenium(II)
Hexafluorophosphate-pyromellitic dianhydride **copolymer**
223921-21-9P, 3,3',4,4'-Benzophenonetetracarboxylic dianhydride-Bis[4'-(4-
aminophenyl)-2,2':6',2'''-terpyridyl]ruthenium(II) Hexafluorophosphate
copolymer 223921-22-0P, Bis[4'-(4-aminophenyl)-2,2':6',2'''-
terpyridyl]ruthenium(II) Hexafluorophosphate-4,4'-
(Hexafluoroisopropylidene)diphthalic anhydride **copolymer**
223921-23-1P, Bis[4'-(4-aminophenyl)-2,2':6',2'''-terpyridyl]ruthenium(II)
Hexafluorophosphate-4,4'-Oxydiphthalic anhydride **copolymer**
223921-25-3P, Biphenyl tetracarboxylic dianhydride-Bis[4'-(4-aminophenyl)-
2,2':6',2'''-terpyridyl]ruthenium(II) Hexafluorophosphate **copolymer**
223921-28-6P, Bis[4'-(4-aminophenyl)-2,2':6',2'''-terpyridyl]ruthenium(II)
Hexafluorophosphate-3,3',4,4'-diphenyl sulfone tetracarboxylic dianhydride
copolymer
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(electronic and **light-emitting** properties of
polyimides based on bis(terpyridine) ruthenium(II) and arom.
dianhydrides)
- IT 129077-51-6, 4'-(4-Nitrophenyl)-2,2':6',2'''-terpyridine
RL: RCT (Reactant); RACT (Reactant or reagent)
(electronic and **light-emitting** properties of
polyimides based on bis(terpyridine) ruthenium(II) and arom.
dianhydrides)
- IT 178265-65-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(intermediate; electronic and **light-emitting**
properties of polyimides based on bis(terpyridine) ruthenium(II) and
arom. dianhydrides)
- IT 196202-22-9P, Bis[4'-(4-aminophenyl)-2,2':6',2'''-terpyridyl]ruthenium(II)

Hexafluorophosphate

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (monomer; electronic and light-emitting properties
 of polyimides based on bis(terpyridine) ruthenium(II) and arom.
 dianhydrides)

IT 10049-08-8, Ruthenium trichloride

RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactant; electronic and light-emitting properties
 of polyimides based on bis(terpyridine) ruthenium(II) and arom.
 dianhydrides)

IT 7772-99-8, Tin(II) chloride, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
 (reducing agent; electronic and light-emitting
 properties of polyimides based on bis(terpyridine) ruthenium(II) and
 arom. dianhydrides)

IT 50926-11-9, ITO

RL: DEV (Device component use); USES (Uses)
 (electrode; electronic and light-emitting
 properties of polyimides based on bis(terpyridine) ruthenium(II) and
 arom. dianhydrides)

RN 50926-11-9 HCPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

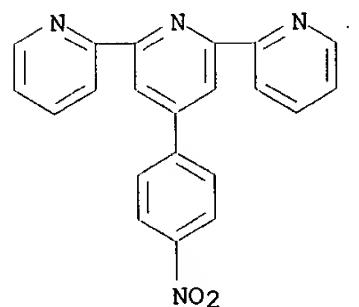
Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT 129077-51-6, 4'-(4-Nitrophenyl)-2,2':6',2''-terpyridine

RL: RCT (Reactant); RACT (Reactant or reagent)
 (electronic and light-emitting properties of
 polyimides based on bis(terpyridine) ruthenium(II) and arom.
 dianhydrides)

RN 129077-51-6 HCPLUS

CN 2,2':6',2''-Terpyridine, 4'-(4-nitrophenyl)- (9CI) (CA INDEX NAME)

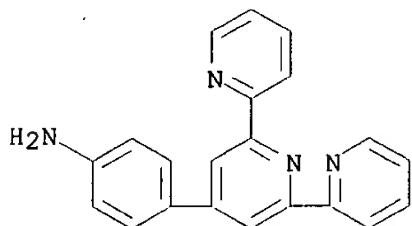


IT 178265-65-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (intermediate; electronic and light-emitting
 properties of polyimides based on bis(terpyridine) ruthenium(II) and
 arom. dianhydrides)

RN 178265-65-1 HCPLUS

CN Benzenamine, 4-[2,2':6',2'''-terpyridin]-4'-yl- (9CI) (CA INDEX NAME)



RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L58 ANSWER 27 OF 36 HCPLUS COPYRIGHT 2002 ACS
 AN 1999:113901 HCPLUS
 DN 130:160352
 TI **Electroluminescent device**
 IN Nuesch, Frank Alain; Rotzinger, Francois; Si-Ahmed, Lynda; Zuppiroli, Libero
 PA Ecole Polytechnique Federale de Lausanne, Switz.
 SO PCT Int. Appl., 57 pp.
 CODEN: PIXXD2
 DT Patent
 LA French
 FAN.CNT 1
- | | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | WO 9907028 | A1 | 19990211 | WO 1998-CH324 | 19980731 |
| | W: JP, US
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
PT, SE | | | | |
| | EP 1012892 | A1 | 20000628 | EP 1998-934728 | 19980731 |
| | R: CH, DE, FR, GB, LI, NL
JP 2001512145 | T2 | 20010821 | JP 2000-505659 | 19980731 |
| PRAI | CH 1997-1844 | A | 19970731 | | |
| | WO 1998-CH324 | W | 19980731 | | |
| OS | MARPAT 130:160352 | | | | |
| AB | The invention concerns a electroluminescent device with a multilayer structure comprising: (i) a 1st electrode including a layer, consisting of a transparent or translucent conductive material selected among metal oxides and metal nitrides , said layer being deposited on a transparent support, consisting of a glass, Si, alumina plate, or a polymer sheet; (ii) a 2nd electrode; (iii) a layer, arranged between the 2 electrodes, comprising a semiconductor and electroluminescent solid org. substance, said layer being optionally bordered with 1 or several intermediate layers, consisting of electrocatalysts; and (iv) a layer with monomol. structure, arranged between the layer consisting of the conductive material and the layer consisting of the electroluminescent substance. Said device is further characterized in that said layer consists of a dipolar org. compd. whereof the structure has an electronic system .pi., a functional group, vicinal or not of the electronic system .pi.. Also, the dipolar org. compd. is chem. bound by the functional group to the conductive material and has chem. affinity for the org. electroluminescent substance. | | | | |
| IC | ICM H01L051-20
ICS H05B033-20 | | | | |

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 78

ST **electroluminescent** device multilayer ruthenium complex hydroxyquinoline aluminum; metal nitride oxide
electroluminescent device multilayer; electrocatalyst
electroluminescent device multilayer ruthenium complex hydroxyquinoline aluminum; glass **electroluminescent** device multilayer ruthenium complex hydroxyquinoline aluminum; polymer
electroluminescent device multilayer ruthenium complex hydroxyquinoline aluminum; monolayer **electroluminescent** device multilayer ruthenium complex hydroxyquinoline aluminum; ITO
electroluminescent device multilayer ruthenium complex hydroxyquinoline aluminum; electrode **electroluminescent** device multilayer ruthenium complex hydroxyquinoline aluminum; functional group
electroluminescent device multilayer ruthenium org complex

IT Catalysts
(electrocatalysts; **electroluminescent** device with multilayer structure and ruthenium org. complex, org. derivs., and hydroxyquinoline aluminum)

IT Dipole moment

Electrodes
Electroluminescent devices

Functional groups

Monolayers
(**electroluminescent** device with multilayer structure and ruthenium org. complex, org. derivs., and hydroxyquinoline aluminum)

IT Glass, uses

Nitrides

Oxides (inorganic), uses
Polymers, uses
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** device with multilayer structure and ruthenium org. complex, org. derivs., and hydroxyquinoline aluminum)

IT 62-23-7, 4-Nitrobenzoic acid 824-77-1, 4-Carboxy-1-methylpyridinium betaine 2085-33-8, Hydroxyquinoline aluminum 20466-00-6, N,N'-Diethyl-3,3'-bicarbazole 33046-28-5 37271-44-6 50926-11-9, ITO 101697-53-4 122738-25-4 178555-82-3 220160-62-3 220160-67-8 220185-30-8
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** device with multilayer structure and ruthenium org. complex, org. derivs., and hydroxyquinoline aluminum)

IT 207287-34-1P
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(**electroluminescent** device with multilayer structure and ruthenium org. complex, org. derivs., and hydroxyquinoline aluminum)

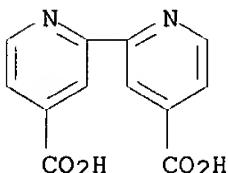
IT 106548-41-8
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(**electroluminescent** device with multilayer structure and ruthenium org. complex, org. derivs., and hydroxyquinoline aluminum)

IT 121-44-8, reactions 6813-38-3, 2,2'-Bipyridyl-4,4'-dicarboxylic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(**electroluminescent** device with multilayer structure and ruthenium org. complex, org. derivs., and hydroxyquinoline aluminum)

IT 50926-11-9, ITO
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** device with multilayer structure and

RN 50926-11-9 HCAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5
IT	6813-38-3, 2,2'-Bipyridyl-4,4'-dicarboxylic acid RL: RCT (Reactant); RACT (Reactant or reagent) (electroluminescent device with multilayer structure and ruthenium org. complex, org. derivs., and hydroxyquinoline aluminum)	
RN	6813-38-3 HCAPLUS	
CN	[2,2'-Bipyridine]-4,4'-dicarboxylic acid (8CI, 9CI) (CA INDEX NAME)	



RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L58 ANSWER 28 OF 36 HCAPLUS COPYRIGHT 2002 ACS
 AN 1998:446793 HCAPLUS
 DN 129:154018
 TI Highly Efficient Solid-State Electrochemically Generated Chemiluminescence from Ester-Substituted Trisbipyridineruthenium(II)-Based **Polymers**
 AU Elliott, C. Michael; Pichot, Francois; Bloom, Corey J.; Rider, Lonn S.
 CS Department of Chemistry, Colorado State University, Ft. Collins, CO, 80523, USA
 SO Journal of the American Chemical Society (1998), 120(27), 6781-6784
 CODEN: JACSAT; ISSN: 0002-7863
 PB American Chemical Society
 DT Journal
 LA English
 AB A **polymerizable** ester-substituted trisbipyridine complex of ruthenium(II) was synthesized and the solid-state electrochemiluminescence (ECL) properties of its **polymer** evaluated. A collection of 12 sandwich-type solid-state cells were studied each having a .apprx. 0.3 .mu.m thick film of the **polymer** sandwiched between a transparent indium/tin oxide (ITO) anode and a porous Au cathode. The ECL of these devices was evaluated in the solid state. Despite considerable variability in performance, the most efficient of these devices exhibited ECL quantum yields matching the efficiency of the best org. **polymer** based light-emitting devices.
 CC 72-2 (Electrochemistry)
 Section cross-reference(s): 27, 35, 36, 73, 78
 ST solid state electrochem generated chemiluminescence;
 bipyridinedicarboxylic acid ester ruthenium **polymer** ECL; cell
 solid state electrochem generated chemiluminescence
 IT Electroluminescent devices
 Luminescence, chemiluminescence

(electrochemiluminescence; highly efficient solid-state electrochem.
generated chemiluminescence from ester-substituted
trisbipyridineruthenium(II)-based polymers)

IT Polymerization
(photopolymer.; of ruthenium bis[(acrylylpropoxy)carbonyl]bipyridine complexes)

IT Electrolytic cells
(solid-state; highly efficient solid-state electrochem. generated chemiluminescence from ester-substituted trisbipyridineruthenium(II)-based polymers)

IT Polymerization
(thermal; of ruthenium bis[(acrylylpropoxy)carbonyl]bipyridine complexes)

IT 7440-57-5, Gold, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(ITO anode in solid-state cell with porous Au cathode with ester-substituted trisbipyridineruthenium(II)-based polymers for electrochemiluminescence)

IT 50926-11-9, Ito
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(anode in solid-state cell with porous Au cathode with ester-substituted trisbipyridineruthenium(II)-based polymers for electrochemiluminescence)

IT 210902-93-5
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(highly efficient solid-state electrochem. generated chemiluminescence from ester-substituted trisbipyridineruthenium(II)-based polymers)

IT 210902-91-3P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and polymer. for highly efficient solid-state electrochem. generated chemiluminescence from ester-substituted trisbipyridineruthenium(II)-based polymers)

IT 210902-94-6P, 4,4'-Bis[(3-acrylylpropoxy)carbonyl]-2,2'-bipyridine
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction with Ru-DMSO complex)

IT 210902-96-8P, 4,4'-Bis[(3-hydroxypropoxy)carbonyl]-2,2'-bipyridine
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(prepn. and reaction with acryloyl chloride)

IT 72460-28-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with propanediol)

IT 6813-38-3, 4,4'-Dicarboxy-2,2'-bipyridine
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with thionyl chloride)

IT 7440-57-5, Gold, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(ITO anode in solid-state cell with porous Au cathode with ester-substituted trisbipyridineruthenium(II)-based polymers for electrochemiluminescence)

RN 7440-57-5 HCAPLUS
CN Gold (8CI, 9CI) (CA INDEX NAME)

Au

IT 50926-11-9, Ito

RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (anode in solid-state cell with porous Au cathode with
 ester-substituted trisbipyridineruthenium(II)-based polymers
 for electrochemiluminescence)

RN 50926-11-9 HCPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

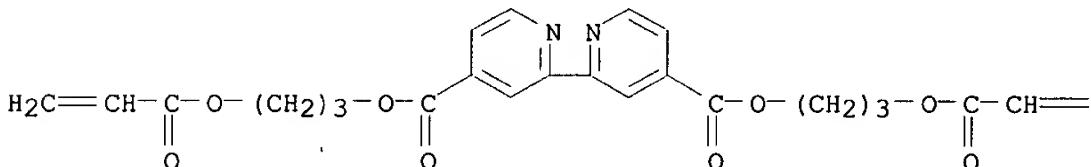
Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT 210902-94-6P, 4,4'-Bis[(3-acrylylpropoxy)carbonyl]-2,2'-bipyridine
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (prepn. and reaction with Ru-DMSO complex)

RN 210902-94-6 HCPLUS

CN [2,2'-Bipyridine]-4,4'-dicarboxylic acid, bis[3-[(1-oxo-2-
 propenyl)oxy]propyl] ester (9CI) (CA INDEX NAME)

PAGE 1-A

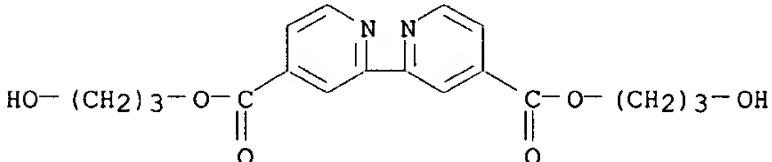


PAGE 1-B

=CH₂

IT 210902-96-8P, 4,4'-Bis[(3-hydroxypropoxy)carbonyl]-2,2'-bipyridine
 RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
 (prepn. and reaction with acryloyl chloride)

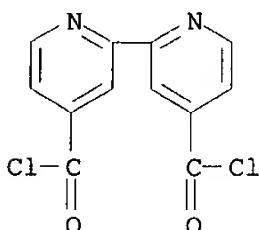
RN 210902-96-8 HCPLUS

CN [2,2'-Bipyridine]-4,4'-dicarboxylic acid, bis(3-hydroxypropyl) ester (9CI)
 (CA INDEX NAME)

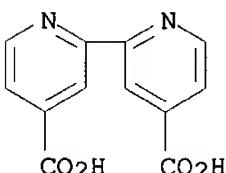
IT 72460-28-7

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with propanediol)
 RN 72460-28-7 HCAPLUS
 CN [2,2'-Bipyridine]-4,4'-dicarbonyl dichloride (9CI) (CA INDEX NAME)



IT 6813-38-3, 4,4'-Dicarboxy-2,2'-bipyridine
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction with thionyl chloride)
 RN 6813-38-3 HCAPLUS
 CN [2,2'-Bipyridine]-4,4'-dicarboxylic acid (8CI, 9CI) (CA INDEX NAME)



L58 ANSWER 29 OF 36 HCAPLUS COPYRIGHT 2002 ACS
 AN 1997:385456 HCAPLUS
 DN 127:10876
 TI Light-transforming compositions for extruded polyethylene film manufacture
 IN Korovin, Yu. F.; Okhapkin, A. G.; Myasnikov, V. K.; Silkin, V. A.;
 Zarajskij, A. V.; Zhukova, N. G.; Shurmel, L. B.; Pastukhova, I. V.;
 Stupin, N. P.; Sokalskaya, L. I.
 PA Proizvodstvennoe Ob"edinenie "pridneprovskij Khimicheskij Zavod", USSR;
 Vsesoyuznyj Nauchno-Issledovatelskij Institut Khimicheskoj Tekhnologii
 SO U.S.S.R., 242 pp.
 From: Izobreteniya 1996, (28), 242.
 CODEN: URXXAF
 DT Patent
 LA Russian
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI SU 1780309	A1	19961010	SU 1990-4880790	19900907

 AB Title only translated.
 IC ICM C09K011-06
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 38
 IT Extrusion of plastics and rubbers
 Luminescent substances
 (light-transforming compn. for extrusion polyethylene film making)
 IT 66-71-7D, 1,10-Phenanthroline, europium nitrato complexes
 366-18-7D, 2,2'-Bipyridine, europium nitrato complexes
 1134-35-6D, 4,4'-Dimethyl-2,2'-Bipyridine, europium nitrato

complexes 7440-53-1D, Europium, nitrato complexes with phenanthroline and bipyridine derivs., uses 9002-88-4, Polyethylene 14797-55-8D, Nitrate, europium complexes with phenanthroline and bipyridine derivs., uses

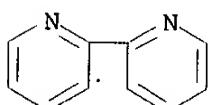
RL: TEM (Technical or engineered material use); USES (Uses) (light-transforming compn. for extrusion polyethylene film making)

IT 366-18-7D, 2,2'-Bipyridine, europium nitrato complexes 1134-35-6D, 4,4'-Dimethyl-2,2'-Bipyridine, europium nitrato complexes 7440-53-1D, Europium, nitrato complexes with phenanthroline and bipyridine derivs., uses

RL: TEM (Technical or engineered material use); USES (Uses) (light-transforming compn. for extrusion polyethylene film making)

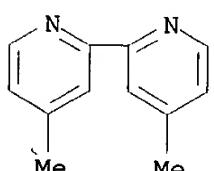
RN 366-18-7 HCPLUS

CN 2,2'-Bipyridine (8CI, 9CI) (CA INDEX NAME)



RN 1134-35-6 HCPLUS

CN 2,2'-Bipyridine, 4,4'-dimethyl- (9CI) (CA INDEX NAME)



RN 7440-53-1 HCPLUS

CN Europium (8CI, 9CI) (CA INDEX NAME)

Eu

L58 ANSWER 30 OF 36 HCPLUS COPYRIGHT 2002 ACS

AN 1997:224276 HCPLUS

DN 126:323101

TI Thin film light emitting heterostructures: from conjugated polymers to ruthenium complexes to inorganic nanocrystallites

AU Lee, J.-K.; MattoSSI, H.; Yoo, D.; Wu, A.; Rubner, M. F.

CS Dep. Materials Sci. Eng., MIT, Cambridge, MA, 02139, USA

SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1997), 38(1), 351-352

CODEN: ACPPAY; ISSN: 0032-3934

PB American Chemical Society, Division of Polymer Chemistry

DT Journal

LA English

AB Authors examine the heterostructure in which the hole- and electron-transporting are used on the promote the enhanced devices performance. They used the mol. level device processing techniques to control devices architecture (layer thickness and the nature of the

electrode-light **emitter** interface). The devices fabrication and their characteristics are described.

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST thin film light emitting **electroluminescent** device; polymer ruthenium complex **electroluminescent** device

IT **Electroluminescent** devices
(thin film light emitting heterostructures with conjugated **polymers** contg. ruthenium complexes and inorg. nanocrystallites)

IT 1306-24-7, Cadmium selenide, properties **7440-18-8D**, Ruthenium, Dodecanedioic acid bipyridinedimethanol polyester complex, properties 25087-26-7, Poly(methacrylic acid) 26009-24-5, Poly(p-phenylene vinylene) 71550-12-4 **189342-83-4D**, ruthenium complex **189342-84-5D**, ruthenium complex
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(thin film light emitting heterostructures with conjugated **polymers** contg. ruthenium complexes and inorg. nanocrystallites)

IT **7440-18-8D**, Ruthenium, Dodecanedioic acid bipyridinedimethanol polyester complex, properties **189342-83-4D**, ruthenium complex **189342-84-5D**, ruthenium complex
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(thin film light emitting heterostructures with conjugated **polymers** contg. ruthenium complexes and inorg. nanocrystallites)

RN 7440-18-8 HCAPLUS

CN Ruthenium (8CI, 9CI) (CA INDEX NAME)

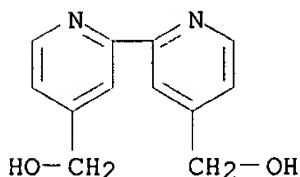
Ru

RN **189342-83-4** HCAPLUS

CN Dodecanedioic acid, polymer with [2,2'-bipyridine]-4,4'-dimethanol (9CI)
(CA INDEX NAME)

CM 1

CRN 109073-77-0
CMF C12 H12 N2 O2

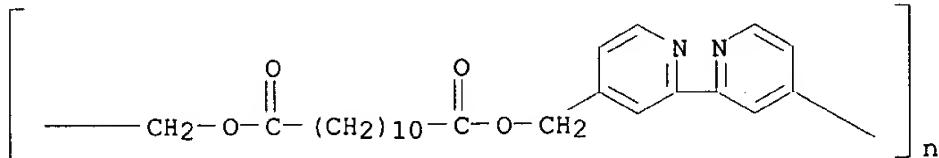


CM 2

CRN 693-23-2
CMF C12 H22 O4

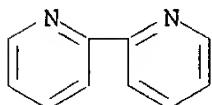
HO2C-(CH2)10-CO2H

RN 189342-84-5 HCPLUS
 CN Poly[2,2'-bipyridine]-4,4'-diylmethoxy(1,12-dioxo-1,12-dodecanediyl)oxymethylene] (9CI) (CA INDEX NAME)



L58 ANSWER 31 OF 36 HCPLUS COPYRIGHT 2002 ACS
 AN 1994:135706 HCPLUS
 DN 120:135706
 TI Poly (thiophene-2,5-diyl) having crown ethereal subunit. Preparation, stable n-doped state, and light emitting diode
 AU Miyazaki, Yuichi; Yamamoto, Takakazu
 CS Res. Lab. Resour. Util., Tokyo Inst. Technol., Yokohama, 227, Japan
 SO Chemistry Letters (1994), (1), 41-4
 CODEN: CMLTAG; ISSN: 0366-7022
 DT Journal
 LA English
 AB *.pi.-Conjugated polythiophene having crown ethereal subunit, PCT5, reacts with metallic Na to afford a Na-doped or n-doped semiconducting material, which shows good stability against O₂ in air presumably due to strong interaction between Na⁺ and the crown ethereal subunit. An indium tin oxide|PCT5|Al elec. junction serves as a light emitting diode, which starts to emit light at 6 V.*
 CC 36-5 (Physical Properties of Synthetic High Polymers)
 Section cross-reference(s): 35, 76
 ST oxygen stable doped crown polythiophene; air stable doped crown polythiophene; light emitting diode crown polythiophene; electroluminescence crown ether polythiophene
 IT Polymerization catalysts
(bis(cyclooctadiene)nickel-bipyridine, for polymn. of dichlorothiophene crown ether deriv.)
 IT Electric conductors, polymeric
(crown ether-contg. polythiophenes, prepn. and doping and characterization of, light-emitting diodes from)
 IT Electroluminescent devices
(indium tin oxide-crown ether-contg. polythiophene-magnesium or silver)
 IT Crown compounds
 RL: SPN (Synthetic preparation); PREP (Preparation)
(thiophene-based polymers, prepn. and doping and application of, in light-emitting diodes)
 IT 1295-35-8, Bis(1,5-cyclooctadiene)nickel
 RL: CAT (Catalyst use); USES (Uses)
(catalysts, contg. bipyridine, for polymn. of dichlorothiophene crown ether deriv.)
 IT 366-18-7, 2,2'-Bipyridine
 RL: CAT (Catalyst use); USES (Uses)
(catalysts, contg. bis(cyclooctadiene)nickel, for polymn. of

IT dichlorothiophene crown ether deriv.)
 IT 7429-90-5, Aluminum, uses 7439-95-4, Magnesium, uses 7440-22-4
 , Silver, uses
 RL: USES (Uses)
 (light-emitting diodes, with crown ether-contg.
 polythiophene and indium tin oxide, characteristics of)
 IT 50926-11-9, Indium tin oxide
 RL: PRP (Properties)
 (light-emitting diodes, with crown ether-contg.
 polythiophenes and magnesium or silver or aluminum, characteristics of)
 IT 153343-68-1P 153343-69-2P 153343-70-5P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and sodium doping and application of, in light-
 emitting diodes)
 IT 366-18-7, 2,2'-Bipyridine
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, contg. bis(cyclooctadiene)nickel, for polymn. of
 dichlorothiophene crown ether deriv.)
 RN 366-18-7 HCAPLUS
 CN 2,2'-Bipyridine (8CI, 9CI) (CA INDEX NAME)



IT 7440-22-4, Silver, uses
 RL: USES (Uses)
 (light-emitting diodes, with crown ether-contg.
 polythiophene and indium tin oxide, characteristics of)
 RN 7440-22-4 HCAPLUS
 CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

IT 50926-11-9, Indium tin oxide
 RL: PRP (Properties)
 (light-emitting diodes, with crown ether-contg.
 polythiophenes and magnesium or silver or aluminum, characteristics of)
 RN 50926-11-9 HCAPLUS
 CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

L58 ANSWER 32 OF 36 HCAPLUS COPYRIGHT 2002 ACS
 AN 1993:619162 HCAPLUS
 DN 119:219162
 TI Electrochemiluminescent label for DNA probe assays
 IN Gudibande, Satyanarayana R.; Kenten, John H.
 PA Igen, Inc., USA

SO PCT Int. Appl., 62 pp.

CODEN: PIXXD2

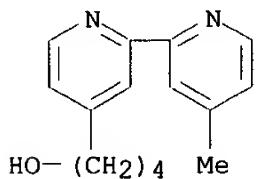
DT Patent

LA English

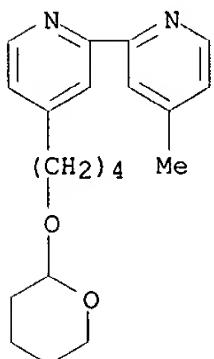
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9312256	A1	19930624	WO 1992-US10480	19921207
	W: AU, CA, JP, KR RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	ZA 9209351	A	19930604	ZA 1992-9351	19921202
	IL 103960	A1	20000831	IL 1992-103960	19921203
	IL 125465	A1	20001031	IL 1998-125465	19921203
	AU 9332388	A1	19930719	AU 1993-32388	19921207
	AU 661757	B2	19950803		
	EP 667919	A1	19950823	EP 1993-900868	19921207
	EP 667919	B1	20010926		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	JP 3067030	B2	20000717	JP 1993-510980	19921207
	JP 07503947	T2	19950427		
	AT 206170	E	20011015	AT 1993-900868	19921207
	ES 2164069	T3	20020216	ES 1993-900868	19921207
	US 5610017	A	19970311	US 1995-461038	19950605
	US 5686244	A	19971111	US 1995-461645	19950605
	US 5597910	A	19970128	US 1995-479817	19950607
PRAI	US 1991-805537	A	19911211		
	IL 1992-103960	A3	19921203		
	WO 1992-US10480	A	19921207		
	US 1994-307026	B3	19940915		
OS	MARPAT 119:219162				
AB	The title labels comprise Ru, Os, or Re complexed with 3 heterocyclic ring systems, e.g., bipyridyl, the ring system being substituted with .gtoreq.1 (CH ₂) _n OPab or (CH ₂) _n X(CH ₂) _n OPab [n=1-20; X=O,S,SO ₂ ,COO,CONH; a,b=N(CH(Me) ₂) ₂ ,NCH(Me) ₂ ,O(CH ₂) ₂ CN,OMe,morpholino, and a.noteq.b]. The metal complex may be attached to an oligonucleotide by the a or b group to provide an electroluminescent hybridization probe or PCR primer. A Ru-contg. label was prepd., conjugated to oligonucleotides, and used in PCR amplification of human interferon-.gamma. gene, human papilloma virus DNA, and HIV-1 DNA. Use of such tagged oligonucleotides for hybridization was described. The effect of the label on hybridization kinetics and melting behavior was detd. The labeled oligonucleotides were found to be stable to I oxidn. and NH ₃ hydrolysis, and the label did not interact with DNA and alter binding affinity of the labeled probes.				
IC	ICM C12Q001-68				
	ICS G01N021-76				
CC	3-1 (Biochemical Genetics)				
IT	PCR (polymerase chain reaction)				
	(electrochemiluminescent labels for oligonucleotide primers in)				
IT	33821-94-2P 118724-27-9P 135804-28-3P 144642-43-3P				
	150749-58-9P 150775-11-4P				
	RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)				
	(prepn. and reaction of, in electrochemiluminescent label prepn.)				
IT	110-87-2 627-18-9 1134-35-6 19542-80-4				
	RL: RCT (Reactant); RACT (Reactant or reagent)				
	(reaction of, in electrochemiluminescent label prepn.)				
IT	118724-27-9P 135804-28-3P 150749-58-9P				
	RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)				
	(prepn. and reaction of, in electrochemiluminescent label prepn.)				

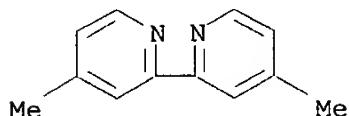
RN 118724-27-9 HCAPLUS
CN [2,2'-Bipyridine]-4-butanol, 4'-methyl- (9CI) (CA INDEX NAME)



RN 135804-28-3 HCAPLUS
CN 2,2'-Bipyridine, 4-methyl-4'-[4-[(tetrahydro-2H-pyran-2-yl)oxy]butyl]- (9CI) (CA INDEX NAME)

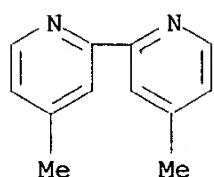


RN 150749-58-9 HCAPLUS
CN 2,2'-Bipyridine, 4,4'-dimethyl-, radical ion(1-), lithium (9CI) (CA INDEX NAME)



● Li⁺

IT 1134-35-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in electrochemiluminescent label prepn.)
RN 1134-35-6 HCAPLUS
CN 2,2'-Bipyridine, 4,4'-dimethyl- (9CI) (CA INDEX NAME)



L58 ANSWER 33 OF 36 HCAPLUS COPYRIGHT 2002 ACS
 AN 1992:621936 HCAPLUS
 DN 117:221936
 TI Electrochemical and electric properties of vacuum-deposited poly(arylene)s: electrochemical activity, diode, and **electroluminescence**
 AU Yamamoto, Takakazu; Wakayama, Hiroshi; Fukuda, Takashi; Kanbara, Takaki
 CS Res. Lab. Resour. Util., Tokyo Inst. Technol., Yokohama, 227, Japan
 SO J. Phys. Chem. (1992), 96(22), 8677-9
 CODEN: JPCHAX; ISSN: 0022-3654
 DT Journal
 LA English
 AB Vacuum-deposited thin films of poly(arylene)s [poly(p-phenylene), poly(thiophene-2,5-diyl) (PTh), poly(pyridine-2,5-diyl), and poly(2,2'-bipyridine-5,5'-diyl)] are electrochem. active, giving rise to doping and undoping peaks at essentially the same positions as those of original poly(arylene)s. A vacuum-deposited PTh/Au and Al/vacuum-deposited PTh/ITO elec. junctions show rectification of elec. current, which is accounted for by assuming the presence of a Schottky barrier between Al and PTh. The Al vacuum-deposited PTh/ITO junction emits light at an applied voltage of 15 V.
 CC 72-2 (Electrochemistry)
 Section cross-reference(s): 36, 73, 74, 76
 ST polyarylene film electrochem elec property; polyphenylene film electrochem elec property; polythiophenediyl film electrochem elec property; polypyridinediyl film electrochem elec property; polybipyridinediyl film electrochem elec property; electrochromism polyarylene vacuum deposited film; doping undoping electrochem polyarylene film; redox electrochem doping undoping polyarylene film; **electroluminescence**
 polyarylene film; diode polyarylene film
 IT 51325-05-4, Poly(thiophene-2,5-diyl)
 RL: PRP (Properties)
 (elec. redox potential and electrochromism and electrochem. doping and undoping and **electroluminescence** and elec. rectification by vacuum-deposited films of)
 IT 25190-62-9, Poly(p-phenylene) 67987-55-7, Poly(pyridine-2,5-diyl)
 116000-50-1, Poly(2,2'-bipyridine-5,5'-diyl)
 RL: PRP (Properties)
 (elec. redox potential and electrochromism and electrochem. doping and undoping of vacuum-deposited films of)
 IT 50926-11-9, Indium tin oxide
 RL: PRP (Properties)
 (electrode, with vacuum-deposited poly(arylene) films, electrochem. and elec. properties of)
 IT 7440-57-5, Gold, uses
 RL: USES (Uses)
 (junction, with poly(thiophenediyl), with aluminum, elec. rectification by)
 IT 7429-90-5, Aluminum, uses
 RL: USES (Uses)

(junctions, with poly(thiophenediyl) vacuum-deposited films, with gold or indium tin oxide, elec. rectification and electroluminescence in relation to)

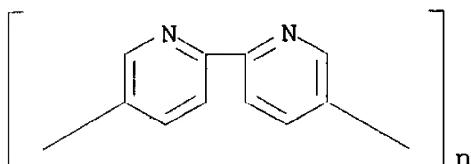
IT 116000-50-1, Poly(2,2'-bipyridine-5,5'-diyl)

RL: PRP (Properties)

(elec. redox potential and electrochromism and electrochem. doping and undoping of vacuum-deposited films of).

RN 116000-50-1 HCAPLUS

CN Poly([2,2'-bipyridine]-5,5'-diyl) (9CI) (CA INDEX NAME)



IT 50926-11-9, Indium tin oxide

RL: PRP (Properties)

(electrode, with vacuum-deposited poly(arylene) films, electrochem. and elec. properties of)

RN 50926-11-9 HCAPLUS

CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

IT 7440-57-5, Gold, uses

RL: USES (Uses)

(junction, with poly(thiophenediyl), with aluminum, elec. rectification by)

RN 7440-57-5 HCAPLUS

CN Gold (8CI, 9CI) (CA INDEX NAME)

Au

L58 ANSWER 34 OF 36 HCAPLUS COPYRIGHT 2002 ACS

AN 1990:229056 HCAPLUS

DN 112:229056

TI Light-emitting probe complex for measuring pH and method of pH measurement

IN Kaneko, Masao; Asakura, Tetsuo; Nakamura, Hideki; Simomura, Takeshi; Sugise, Hiroshi

PA Institute of Physical and Chemical Research, Japan; Terumo Corp.

SO PCT Int. Appl., 15 pp.

CODEN: PIXXD2

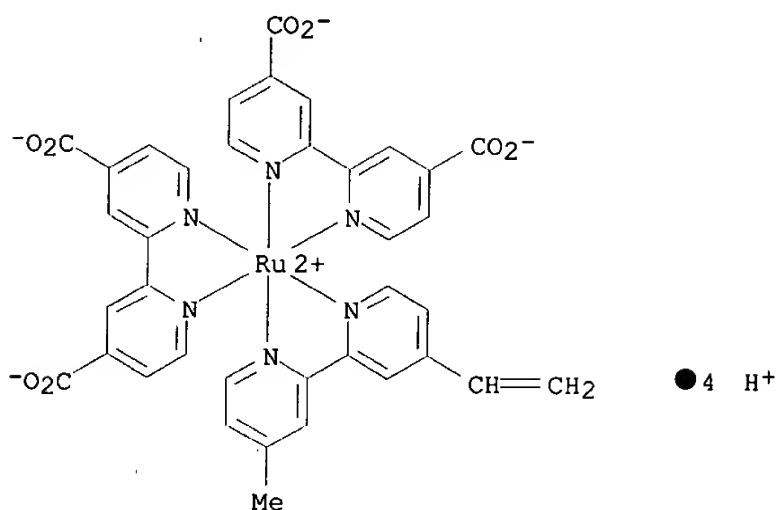
DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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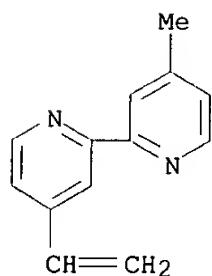
PI	WO 8909400	A1	19891005	WO 1989-JP314	19890324
	W: AU, US				
	RW: BE, DE, FR, GB, IT, NL, SE				
	JP 01244362	A2	19890928	JP 1988-71630	19880325
	JP 06082101	B4	19941019		
	AU 8932974	A1	19891016	AU 1989-32974	19890324
	AU 618232	B2	19911219		
	EP 408748	A1	19910123	EP 1989-903803	19890324
	R: BE, DE, FR, GB, IT, NL, SE				
	US 5118405	A	19920602	US 1990-582176	19900925
PRAI	JP 1988-71630		19880325		
	WO 1989-JP314		19890324		
AB	A light-emitting probe complex measures pH and consists essentially of a polypyridine ligand having an ionizable substituent on a ring C atom and a transition metal ion selected from the Group VIII elements, a light-emitting probe film for measuring pH contg. this probe complex in its polymer film, and a pH measurement instrument formed by fixing this probe film at the tip of an optical fiber and a pH measurement method utilizing this instrument. The present invention facilitates measurement of the pH at a microscopic part by using them.				
IC	ICM G01N031-22 ICS G01N021-64; G01N021-80				
CC	79-6 (Inorganic Analytical Chemistry)				
ST	light emitting probe complex pH measurement				
IT	Fibroins Gelatins, uses and miscellaneous RL: ANST (Analytical study) (light-emitting probe contg., pH detn. by)				
IT	12408-02-5, Hydrogen ion, analysis RL: ANT (Analyte); ANST (Analytical study) (detn of, light-emitting probe complex for)				
IT	78338-26-8 125964-53-6 127189-39-3 RL: ANST (Analytical study) (light-emitting probe contg., pH detn. by)				
IT	125964-53-6 RL: ANST (Analytical study) (light-emitting probe contg., pH detn. by)				
RN	125964-53-6 HCAPLUS				
CN	Ruthenate(2-), bis[[2,2'-bipyridine]-4,4'-dicarboxylato(2-)-N1,N1'] (4-ethenyl-4'-methyl-2,2'-bipyridine-N,N')-, (OC-6-31)-, hydrogen chloride (1:4:2), polymer with 4-ethenyl-4'-methyl-2,2'-bipyridine and 1-ethenyl-2-pyrrolidinone (9CI) (CA INDEX NAME)				
CM	1				
CRN	125964-52-5				
CMF	C37 H24 N6 O8 Ru . 2 Cl . 4 H				
CCI	CCS				



● 2 Cl⁻

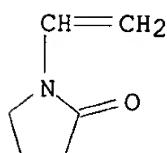
CM 2

CRN 74173-48-1
CMF C13 H12 N2



CM 3

CRN 88-12-0
CMF C6 H9 N O



L58 ANSWER 35 OF 36 HCPLUS COPYRIGHT 2002 ACS

KATHLEEN FULLER EIC 1700/LAW LIBRARY 308-4290

AN 1986:110945 HCAPLUS
 DN 104:110945
 TI **Polymeric** material for covering greenhouses
 IN Golodkova, L. N.; Lepaev, A. F.; Dmitriev, V. M.; Zhavoronkov, N. M.;
 Ziskin, G. L.; Izmailov, G. I.; Ippolitov, E. G.; Karasev, V. E.;
 Karaseva, E. T.; et al.
 PA Kurnakov, N. S., Institute of General and Inorganic Chemistry, USSR;
 Bashkir Institute of Chemistry; Institute of Chemistry, Academy of
 Sciences, U.S.S.R.; Institute of Chemistry, Vladivostok; Chelyabinsk Plant
 of Organic Glass
 SO PCT Int. Appl., 36 pp.
 CODEN: PIXXD2
 DT Patent
 LA Russian
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8501945 W: AU, CH, DE, FI, GB, HU, JP, NL, SE AU 8322660 AU 565143 NL 8320368 NL 189794 NL 189794 DE 3390545 DE 3390545 HU 37160 HU 198745 JP 61500264 JP 02040266 CH 667463 FR 2565457 FR 2565457 SE 8503138 SE 456424 SE 456424 FI 8502579 FI 81820 FI 81820 GB 2158833 GB 2158833	A1 A1 B2 A B C T C2 O B T2 B4 A A1 B1 A B C A B C A1 B2	19850509 19850522 19870903 19850902 19930301 19930802 19851114 19890914 19851128 19891128 19860220 19900911 19881014 19851213 19870821 19850624 19881003 19890202 19850628 19900831 19901210 19851120 19880113	WO 1983-SU41 AU 1983-22660 NL 1983-20368 DE 1983-3390545 HU 1984-122 JP 1983-503824 CH 1985-2868 FR 1984-8962 SE 1985-3138 FI 1985-2579 GB 1985-16535	19831031 19831031 19831031 19831031 19831031 19831031 19831031 19840607 19850624 19850628 19851031
PRAI	WO 1983-SU41		19831031		

AB A **polymeric** material for covering greenhouses comprises a translucent **polymer**, e.g., polyolefin, poly(vinyl chloride), or polycarbonate and an additive which absorbs the UV component of natural light and transforms it through luminescence into a light component in the orange-red spectral range. The additive (0.001-5 wt.%) contains at least 1 compd. of the f-elements, e.g., Eu, Tb, or Sm. Thus, granulated polyethylene was mixed with 0.1 wt.% tris(trioctylphosphine oxide)trichloroeuropium and extruded into a film 0.1-0.15 mm thick. The film absorbed 97% of UV light (wavelength 200-450 nm) and transformed 35% of the absorbed UV light into the orange-red component. The film had a transparency of 75% (at 580-750 nm) and was useful as a covering for greenhouses.

IC ICM C08K005-00
 ICS C09K011-06

CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 73

ST polyolefin film modified greenhouse; PVC film modified greenhouse;
 polycarbonate film modified greenhouse; lanthanide compd

polymer film luminescence; europium compd polymer film luminescence; polyethylene film modified greenhouse

IT Greenhouses
 (cover films for, **polymeric**, rare earth element compd.-contg.)

IT **Luminescent substances**
 (rare earth element compds., for **polymeric** films)

IT 9002-86-2 9002-88-4 9003-07-0 9003-53-6 9011-14-7 25034-86-0
 RL: USES (Uses)
 (films, contg. rare earth metal compds., for greenhouses)

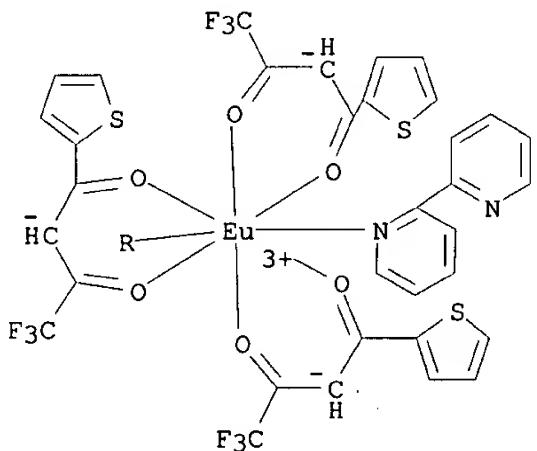
IT 15319-48-9 17443-49-1 17904-86-8 18078-86-9 18078-88-1
 18130-95-5 18421-78-8 31869-48-4 36423-86-6 41128-16-9
 75701-20-1 78732-97-5 87890-98-0 88177-80-4 100226-91-3
 100226-92-4 100226-93-5 100226-94-6 100243-08-1 100243-09-2
 100243-10-5 100243-11-6 100243-12-7 100243-13-8 100243-14-9
 100243-15-0 100294-73-3 100294-74-4 100294-75-5 100294-76-6
 100294-77-7 100294-78-8 100294-79-9 100294-80-2 100294-81-3
 100294-82-4 100294-83-5 100294-84-6 100310-74-5 100310-75-6
 100310-76-7 **100365-85-3** 100788-04-3
 RL: USES (Uses)
 (light-transforming additives, **polymer** films contg., for greenhouse coverings)

IT **100365-85-3**
 RL: USES (Uses)
 (light-transforming additives, **polymer** films contg., for greenhouse coverings)

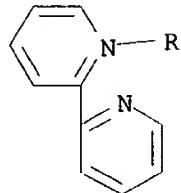
RN 100365-85-3 HCAPLUS

CN Europium, bis(2,2'-bipyridine-N)tris[4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedionato-O,O']- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



L58 ANSWER 36 OF 36 HCPLUS COPYRIGHT 2002 ACS
 AN 1982:563763 HCPLUS
 DN 97:163763
 TI Method for determining hydrogen peroxide concentration in **polymers** or resins
 AU Ehrlich, S. H.; Capone, S. M.
 CS UK
 SO Res. Discl. (1982), 215, 64
 CODEN: RSDSBB; ISSN: 0374-4353
 DT Journal
 LA English
 AB The anal. method uses chemiluminescence to quant. det. trace amts. of H₂O₂ or H₂O₂-forming initiators (e.g., Bz₂O₂) in **polymers** that can be dissolved in water-immiscible solvents. A soln. or dispersion of the **polymer** in a water-immiscible org. solvent is admixed with an aq. chelating agent soln. to ext. any H₂O₂ present. A luminescence reagent (e.g., luminol [521-31-3], luciferin [55963-96-7], lucigenin [2315-97-1], lophine [484-47-9], and **metal** porphyrins) is added to the aq. soln. and the intensity of the emitted light is measured and compared with that of a std. H₂O₂ soln.
 CC 36-4 (Physical Properties of Synthetic High **Polymers**)
 Section cross-reference(s): 80
 ST chemiluminescence detn peroxide **polymer**; chelating agent **polymer** analysis; luminol analysis **polymer**; luciferin analysis **polymer**; lucigenin analysis **polymer**; lophine analysis **polymer**; porphyrin analysis **polymer**; hydrogen peroxide detn **polymer**
 IT **Polymers**, analysis
 RL: ANST (Analytical study)
 (hydrogen peroxide detn. in, chemiluminescence reagents in)
 IT Chelating agents
 Luminescence, chemi-
 (in detn. of hydrogen peroxide in **polymers**)
 IT Porphyrins
 RL: PRP (Properties)
 (**metal** complexes, in detn. of hydrogen peroxide in **polymers**)
 IT Ketones, uses and miscellaneous
 RL: PRP (Properties)
 (.beta.-di-, chelating agents, in detn. of hydrogen peroxide in **polymers**)
 IT 60-00-4, uses and miscellaneous 107-15-3, uses and miscellaneous
 111-40-0 366-18-7
 RL: USES (Uses)
 (chelating agents, in detn. of hydrogen peroxide in **polymers**)
 IT 4741-30-4D, O-esters 72847-58-6
 RL: PRP (Properties)

(chelating agents, in detn. of hydrogen peroxide in polymers)
IT 7722-84-1, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, in polymers, chemiluminescence reagents in)
IT 484-47-9 521-31-3 2315-97-1 55963-96-7
RL: PRP (Properties)
(in detn. of hydrogen peroxide in polymers)
IT 366-18-7
RL: USES (Uses)
(chelating agents, in detn. of hydrogen peroxide in polymers)
RN 366-18-7 HCAPLUS
CN 2,2'-Bipyridine (8CI, 9CI) (CA INDEX NAME)

